Figure 1A

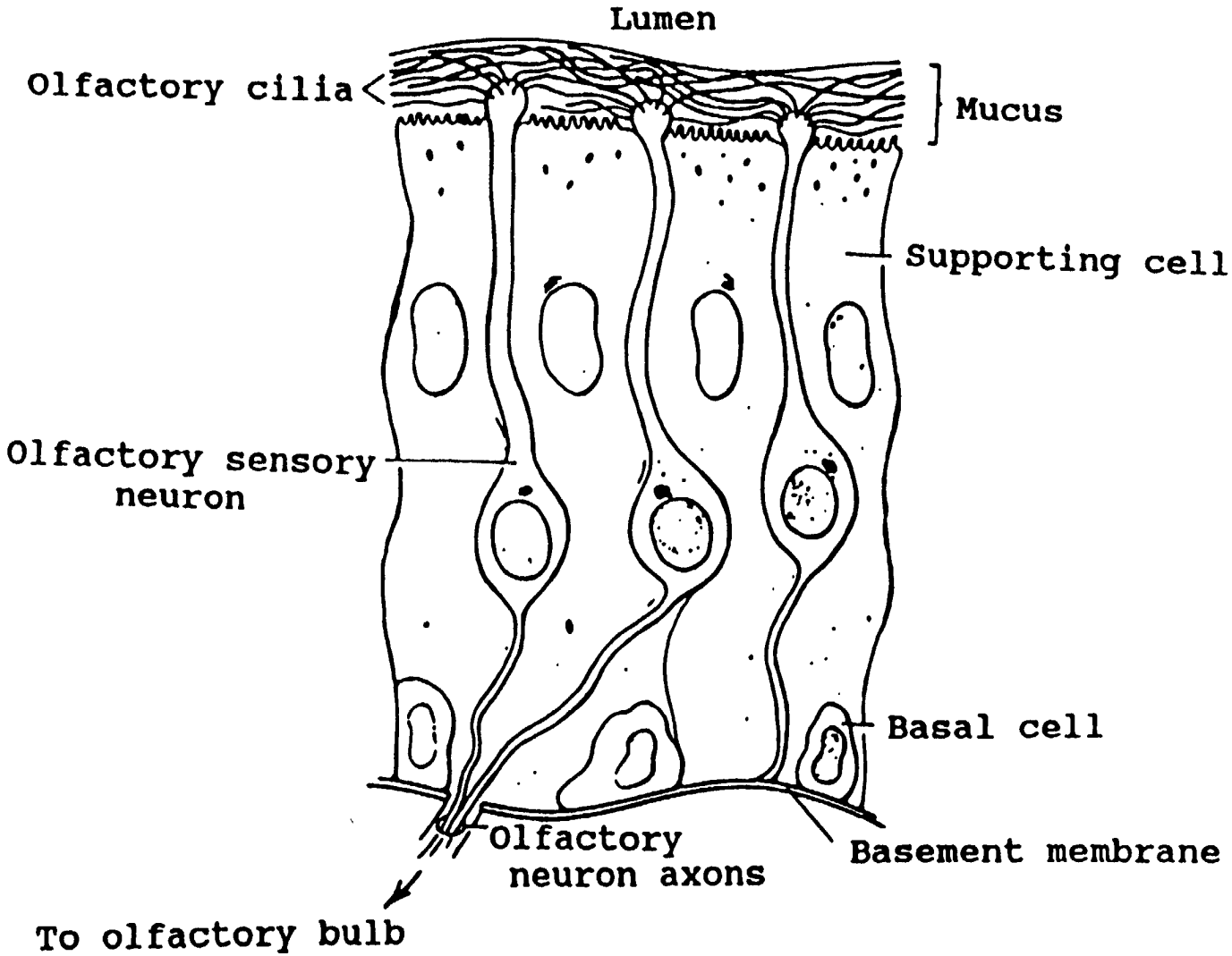
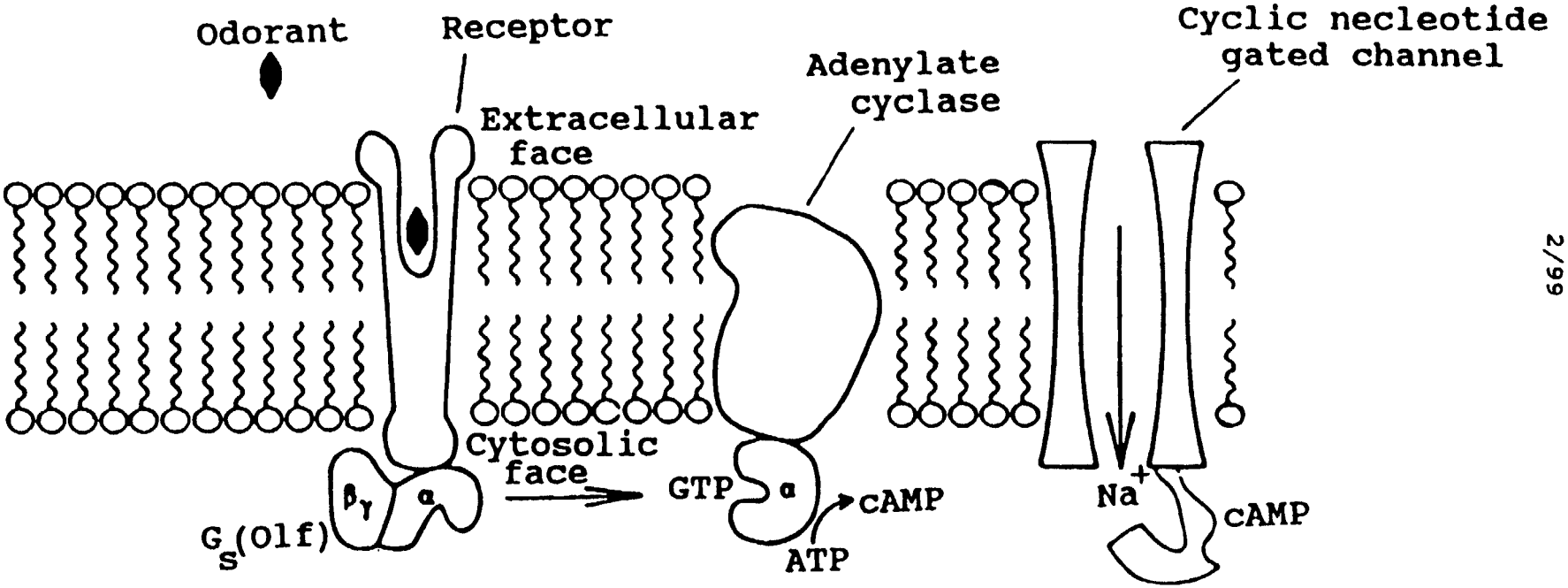


Figure 1B



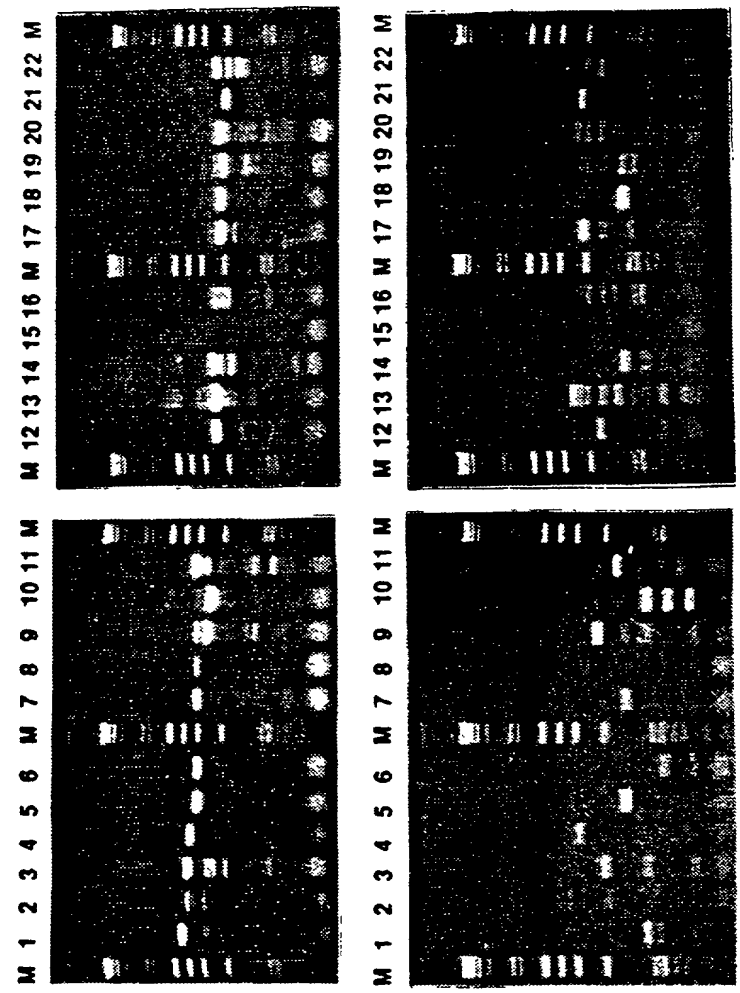


Figure 2A

Figure 2B

Figure 3

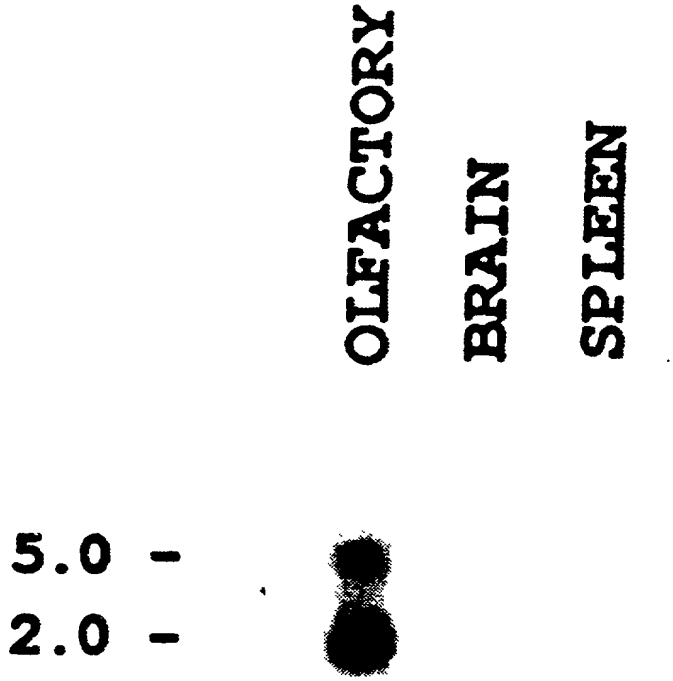


Figure 4A

F3				M	D	S	S	N	R	T	R	V	S	E	11
F5				M	S	S	T	N	Q	S	S	V	T	E	11
F6	M	A	W	S	T	G	Q	N	L	S	T	P	G	P	14
F12			M	E	S	G	N	S	T	R	R	F	S	S	12
I3				M	N	-	-	N	Q	T	F	I	T	Q	9
I7			M	E	R	R	N	H	S	G	R	V	S	E	12
I8				M	N	-	-	N	K	T	V	I	T	H	9
I9				M	T	R	R	N	Q	T	A	I	S	Q	11
I14				M	T	G	N	N	Q	T	L	I	L	E	11
I15				M	T	E	E	N	Q	T	V	I	S	Q	11

F3	F	L	L	L	G	F	V	E	N	K	D	L	Q	P	25
F5	F	L	L	L	G	L	S	R	Q	P	Q	Q	Q	Q	25
F6	F	I	L	L	G	F	P	G	P	R	S	M	R	I	28
F12	F	F	L	L	G	F	T	E	N	P	Q	L	H	F	26
I3	F	L	L	L	G	L	P	I	P	E	E	H	Q	H	23
I7	F	V	L	L	G	F	P	A	P	A	P	L	R	V	26
I8	F	L	L	L	G	L	P	I	P	P	E	H	Q	Q	23
I9	F	F	L	L	G	L	P	F	P	P	E	Y	Q	H	25
I14	F	L	L	L	G	L	P	I	P	S	E	Y	H	L	25
I15	F	L	L	L	F	L	P	I	P	S	E	H	Q	H	25

Figure 4B

	I												
F3	**L**	I	Y	G	**L**	**F**	**L**	S	**M**	**Y**	**L**	V	**T**	V	39
F5	**L**	L	F	L	**L**	**F**	**L**	I	**M**	**Y**	**L**	A	**T**	V	39
F6	G	L	F	L	**L**	**F**	**L**	V	**M**	**Y**	**L**	L	**T**	V	42
F12	**L**	I	F	**A**	**L**	**F**	**L**	S	**M**	**Y**	**L**	V	**T**	V	40
I3	**L**	F	Y	**A**	**L**	**F**	**L**	V	**M**	**Y**	**L**	T	**T**	I	37
I7	**L**	L	F	F	**L**	S	**L**	L	X	**Y**	V	L	V	L	40
I8	**L**	F	F	**A**	**L**	**F**	**L**	I	**M**	**Y**	**L**	T	**T**	F	37
I9	**L**	F	Y	**A**	**L**	**F**	**L**	A	**M**	**Y**	**L**	T	**T**	L	39
I14	**L**	F	Y	**A**	**L**	**F**	**L**	A	**M**	**Y**	**L**	T	I	I	29
I15	V	F	Y	**A**	**L**	**F**	**L**	S	**M**	**Y**	**L**	T	**T**	V	39

	I												
F3	I	**G**	**N**	I	S	**I**	**I**	V	A	**I**	I	S	**D**	P	53
F5	**L**	**G**	**N**	**L**	**L**	**I**	**I**	L	A	**I**	G	T	**D**	**S**	53
F6	V	**G**	**N**	**L**	A	**I**	**I**	S	**L**	V	G	A	H	R	56
F12	**L**	**G**	**N**	**L**	**L**	**I**	**I**	M	A	**I**	I	T	Q	**S**	54
I3	**L**	**G**	**N**	**L**	**L**	**I**	**I**	V	**L**	V	Q	L	**D**	**S**	51
I7	T	E	**N**	M	**L**	**I**	**I**	I	A	**I**	R	N	H	P	54
I8	**L**	**G**	**N**	**L**	**L**	**I**	V	V	**L**	V	Q	L	**D**	**S**	51
I9	**L**	**G**	**N**	**L**	I	**I**	**I**	I	**L**	**I**	L	L	**D**	**S**	53
I14	**L**	**G**	**N**	**L**	**L**	**I**	**I**	V	**L**	V	R	L	**D**	**S**	53
I15	**L**	**G**	**N**	**L**	I	**I**	**I**	I	**L**	**I**	H	L	**D**	**S**	53

Figure 4C

		II												
F3	C	L	H	T	P	M	Y	F	F	L	S	N	L	S	67
F5	R	L	H	T	P	M	Y	F	F	L	S	N	L	S	67
F6	C	L	Q	T	P	M	Y	F	F	L	C	N	L	S	70
F12	H	L	H	T	P	M	Y	F	F	L	A	N	L	S	68
I3	Q	L	H	T	P	M	Y	L	F	L	S	N	L	S	65
I7	T	L	H	K	P	M	Y	F	F	L	A	N	M	S	68
I8	H	L	H	T	P	M	Y	L	F	L	S	N	L	S	65
I9	H	L	H	T	P	M	Y	L	F	L	S	N	L	S	67
I14	H	L	H	M	P	M	Y	L	F	L	S	N	L	S	67
I15	H	L	H	T	P	M	Y	L	F	L	S	N	L	S	67

	II													
F3	F	V	D	I	C	F	I	S	T	T	V	P	K	M	81
F5	F	V	D	V	C	F	S	S	T	T	V	P	K	V	81
F6	F	L	E	I	W	F	T	T	A	C	V	P	K	T	84
F12	F	V	D	I	C	F	T	S	T	T	I	P	K	M	82
I3	F	S	D	L	C	F	S	S	V	T	M	P	K	L	79
I7	F	L	E	I	W	Y	V	T	V	T	I	P	K	M	82
I8	F	S	D	L	C	F	S	S	V	T	M	L	K	L	79
I9	F	A	D	L	C	F	S	S	V	T	M	P	K	L	67
I14	F	S	D	L	C	F	S	S	V	T	M	P	K	L	67
I15	F	S	D	L	C	F	S	S	V	T	M	P	K	L	67

Figure 4D

F3	**L**	-	-	-	-	V	**N**	I	Q	T	**Q**	N	N	V	91
F5	**L**	-	-	-	-	A	**N**	H	I	L	G	S	Q	A	91
F6	**L**	-	-	-	-	A	T	F	A	P	R	G	G	V	94
F12	**L**	-	-	-	-	V	N	I	Y	T	**Q**	S	K	**S**	92
I3	**L**	-	-	-	-	Q	N	M	R	S	**Q**	K	T	**S**	89
I7	**L**	A	G	F	I	G	S	K	E	N	H	G	Q	L	96
I8	**L**	-	-	-	-	Q	**N**	I	Q	S	**Q**	V	P	**S**	89
I9	**L**	-	-	-	-	Q	**N**	M	Q	S	**Q**	V	P	**S**	91
I14	**L**	-	-	-	-	Q	**N**	M	Q	S	**Q**	V	P	**S**	91
I15	**L**	-	-	-	-	Q	**N**	M	Q	S	**Q**	V	P	**S**	91

								III						
F3	**I**	T	**Y**	A	**G**	**C**	I	**T**	**Q**	I	**Y**	**F**	**F**	**L**	105
F5	**I**	S	F	S	**G**	**C**	**L**	**T**	**Q**	L	**Y**	**F**	L	A	105
F6	**I**	S	L	A	**G**	**C**	A	**T**	**Q**	M	**Y**	**F**	V	F	108
F12	**I**	T	**Y**	E	D	**C**	I	S	**Q**	M	C	V	**F**	**L**	106
I3	**I**	P	**Y**	G	**G**	**C**	**L**	A	**Q**	T	**Y**	**F**	**F**	M	103
I7	**I**	S	F	E	A	**C**	M	**T**	**Q**	L	**Y**	**F**	**F**	**L**	110
I8	**I**	S	**Y**	A	**G**	**C**	**L**	**T**	**Q**	I	F	F	**F**	**L**	103
I9	**I**	P	**Y**	A	**G**	**C**	**L**	A	**Q**	I	**Y**	**F**	**F**	**L**	105
I14	**I**	S	**Y**	T	**G**	**C**	**L**	**T**	**Q**	L	**Y**	**F**	**F**	M	105
I15	**I**	P	F	A	**G**	**C**	**L**	**T**	**Q**	L	**Y**	**F**	Y	**L**	105

Figure 4E

	III													
F3	L	F	V	E	L	D	N	F	L	L	T	I	M	A	119
F5	V	F	G	N	M	D	N	F	L	L	A	V	M	S	119
F6	S	L	G	C	T	E	Y	F	L	L	A	V	M	A	122
F12	V	F	A	I	L	G	N	F	L	L	A	V	M	A	120
I3	V	F	G	D	M	E	S	F	L	L	V	A	M	A	117
I7	G	L	G	C	T	E	C	V	L	L	A	V	M	A	124
I8	L	F	G	Y	L	G	N	F	L	L	V	A	M	A	117
I9	F	F	G	D	L	G	N	F	L	L	V	A	M	A	119
I14	V	F	G	D	M	E	S	F	L	L	V	V	M	A	119
I15	Y	F	A	D	L	E	S	F	L	L	V	A	M	A	119

	III													
F3	Y	D	R	Y	V	A	I	C	H	P	M	H	Y	T	133
F5	Y	D	R	F	V	A	I	C	H	P	L	H	Y	T	133
F6	Y	D	R	Y	L	A	I	C	L	P	L	R	Y	G	136
F12	Y	D	R	Y	V	A	X	C	H	P	L	C	Y	T	134
I3	Y	D	R	Y	V	A	I	C	F	P	L	H	Y	T	131
I7	Y	D	R	Y	V	A	I	C	H	P	L	H	Y	P	138
I8	Y	D	R	Y	V	A	I	C	F	P	L	H	Y	T	131
I9	Y	D	R	Y	V	A	I	C	F	P	L	H	Y	M	133
I14	Y	D	R	Y	V	A	I	C	F	P	L	R	Y	T	133
I15	Y	D	R	Y	V	A	I	C	F	P	L	H	Y	M	133

Figure 4F

						IV								
F3	V	I	M	N	Y	K	L	C	G	F	L	V	L	V	147
F5	T	K	M	T	R	Q	L	C	V	L	L	V	V	G	147
F6	G	I	M	T	P	G	L	A	M	R	L	A	L	G	150
F12	V	I	V	N	H	R	L	C	I	L	L	L	L	L	148
I3	S	I	M	S	P	K	L	C	T	C	L	V	L	L	145
I7	V	I	V	S	S	R	L	C	V	Q	M	A	A	G	152
I8	N	I	M	S	H	K	L	C	T	C	L	L	L	V	145
I9	S	I	M	S	P	K	L	C	V	S	L	V	V	L	147
I14	T	I	M	S	T	K	F	C	A	S	L	V	L	L	147
I15	S	I	M	S	P	K	L	C	V	S	L	V	V	L	147

	IV													
F3	S	W	I	V	S	V	L	H	A	L	F	Q	S	L	161
F5	S	W	V	V	A	N	M	N	C	L	L	H	I	L	161
F6	S	W	L	C	G	F	S	A	I	T	V	P	A	T	164
F12	S	W	V	I	S	I	F	H	A	F	I	Q	S	L	162
I3	L	W	M	L	T	T	S	H	A	M	M	H	T	L	159
I7	S	W	A	G	G	F	G	I	S	M	V	K	V	F	166
I8	F	W	I	M	T	S	S	H	A	M	M	H	T	L	159
I9	S	W	V	L	T	T	F	H	A	M	L	H	T	L	161
I14	L	W	M	L	T	M	T	H	A	L	L	H	T	L	161
I15	S	W	V	L	T	T	F	H	A	M	L	H	T	L	161

Figure 4G

F3	M	M	L	A	L	P	F	C	T	H	L	E	I	P	175
F5	L	M	A	R	K	S	F	C	A	D	N	M	I	P	175
F6	L	I	A	R	L	S	F	C	G	S	R	V	I	N	178
F12	I	V	L	Q	L	T	F	C	G	D	V	K	I	P	176
I3	L	A	A	R	L	S	F	C	E	N	N	V	V	L	173
I7	L	I	S	R	L	S	Y	C	G	P	N	T	I	N	180
I8	L	A	A	R	L	S	F	C	E	N	N	V	L	L	173
I9	L	M	A	R	L	S	F	C	E	D	S	V	I	P	175
I14	L	I	A	R	L	S	F	C	E	K	N	V	I	L	175
I15	L	M	A	R	L	S	F	C	A	D	N	M	I	P	175

F3	H	Y	F	C	E	P	N	Q	V	I	Q	L	T	C	189
F5	H	F	F	C	D	G	T	P	L	L	K	L	S	C	189
F6	H	F	F	C	D	I	S	P	W	I	V	L	S	C	192
F12	H	F	F	C	E	L	N	Q	L	S	Q	L	T	C	190
I3	N	F	F	C	D	L	F	V	L	L	K	L	A	C	187
I7	H	F	F	C	D	V	S	P	L	L	N	L	S	C	194
I8	N	F	F	C	D	L	F	V	L	L	K	L	A	C	187
I9	H	Y	F	C	D	M	S	T	L	L	K	V	A	C	189
I14	H	F	F	C	D	I	S	A	L	L	K	L	S	C	189
I15	H	F	F	C	D	I	S	P	L	L	K	L	S	C	189

Figure 4H

								V						
F3	S	D	A	F	L	N	D	L	V	I	Y	F	T	L	203
F5	S	D	T	H	L	N	E	L	M	I	L	T	E	G	203
F6	T	D	T	Q	V	V	E	L	V	S	F	G	I	A	206
F12	S	D	N	F	P	S	H	L	I	M	N	L	V	P	204
I3	S	D	T	Y	I	N	E	L	M	I	F	I	M	S	201
I7	T	D	M	S	T	A	E	L	T	D	F	V	L	A	208
I8	S	D	T	Y	V	N	E	L	M	I	H	I	M	G	201
I9	S	D	T	H	D	N	E	L	A	I	F	I	L	G	203
I14	S	D	I	Y	V	N	E	L	M	I	Y	I	L	G	203
I15	S	D	T	H	V	N	E	L	V	I	F	V	M	G	203

	V													
F3	V	L	L	A	T	V	P	L	A	G	I	F	Y	S	217
F5	A	V	V	M	V	T	P	F	V	C	I	L	I	S	217
F6	F	C	V	I	L	G	S	C	G	I	T	L	V	S	220
F12	V	M	L	A	A	I	S	F	S	G	I	L	Y	S	218
I3	T	L	L	I	I	I	P	F	F	L	I	V	M	S	215
I7	I	F	I	L	L	G	P	L	S	V	T	G	A	S	222
I8	V	I	I	I	V	I	P	F	V	L	I	V	I	S	215
I9	G	P	I	V	V	L	P	F	L	L	I	I	V	S	203
I14	G	L	I	I	I	I	P	F	L	L	I	V	M	S	203
I15	G	L	V	I	V	I	P	F	V	L	I	I	V	S	203

Figure 4I

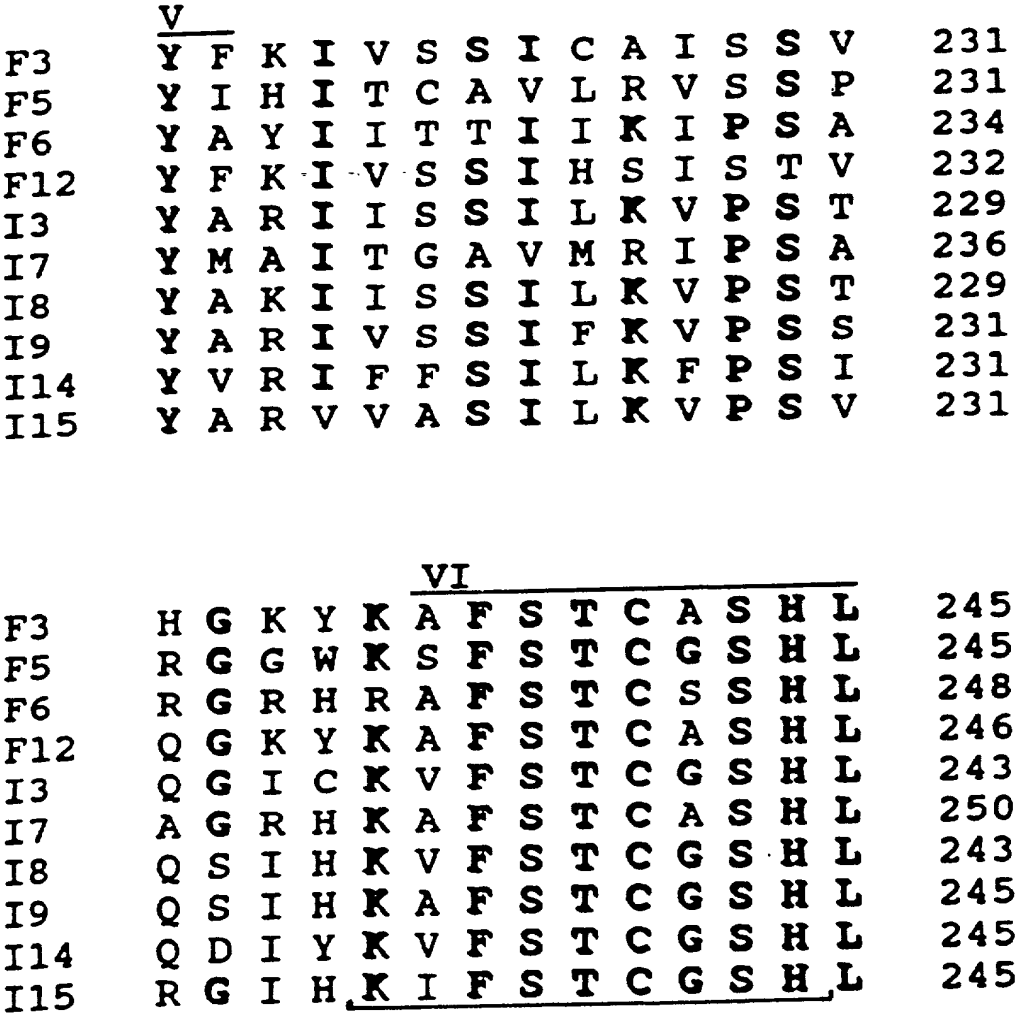

V
F3 Y F K I V S S I C A I S S V 231
F5 Y I H I T C A V L R V S S P 231
F6 Y A Y I I T T I I K I P S A 234
F12 Y F K I V S S I H S I S T V 232
I3 Y A R I I S S I L K V P S T 229
I7 Y M A I T G A V M R I P S A 236
I8 Y A K I I S S I L K V P S T 229
I9 Y A R I V S S I F K V P S S 231
I14 Y V R I F F S I L K F P S I 231
I15 Y A R V V A S I L K V P S V 231
VI
F3 H G K Y K A F S T C A S H L 245
F5 R G G W K S F S T C G S H L 245
F6 R G R H R A F S T C S S H L 248
F12 Q G K Y K A F S T C A S H L 246
I3 Q G I C K V F S T C G S H L 243
I7 A G R H K A F S T C A S H L 250
I8 Q S I H K V F S T C G S H L 243
I9 Q S I H K A F S T C G S H L 245
I14 Q D I Y K V F S T C G S H L 245
I15 R G I H K I F S T C G S H L 245

Figure 4J

	VI													
F3	**S**	**V**	**V**	**S**	**L**	**F**	**Y**	C	**T**	G	L	**G**	V	**Y**	259
F5	A	**V**	**V**	C	**L**	**F**	**Y**	**G**	**T**	V	**I**	A	V	**Y**	259
F6	T	**V**	**V**	L	I	W	**Y**	**G**	S	T	**I**	F	L	H	262
F12	**S**	**I**	**V**	**S**	**L**	**F**	**Y**	S	**T**	G	L	**G**	V	**Y**	260
I3	**S**	**V**	**V**	**S**	**L**	**F**	**Y**	**G**	**T**	I	**I**	**G**	L	**Y**	257
I7	T	**V**	**V**	I	I	**F**	**Y**	A	A	S	**I**	F	I	**Y**	264
I8	**S**	**V**	**V**	**S**	**L**	**F**	**Y**	**G**	**T**	I	**I**	**G**	L	**Y**	257
I9	**S**	**V**	**V**	**S**	**L**	**F**	**Y**	**G**	**T**	V	**I**	**G**	L	**Y**	259
I14	**S**	**V**	**V**	T	**L**	**F**	**Y**	**G**	**T**	I	F	**G**	I	**Y**	259
I15	**S**	**V**	**V**	**S**	**L**	**F**	**Y**	**G**	**T**	I	**I**	**G**	L	**Y**	259

	VI											VII		
F3	**L**	S	S	A	A	N	**N**	**S**	S	Q	A	S	A	T	273
F5	F	N	**P**	**S**	S	S	H	L	A	G	R	D	M	A	273
F6	V	R	T	**S**	V	E	S	**S**	L	D	L	T	K	A	276
F12	V	S	S	A	V	V	Q	**S**	S	H	S	A	A	S	274
I3	**L**	C	**P**	A	G	N	**N**	**S**	T	V	K	E	M	V	271
I7	A	R	**P**	K	A	L	S	A	F	D	T	N	K	L	278
I8	**L**	C	**P**	**S**	G	D	**N**	F	S	L	K	G	S	A	271
I9	**L**	C	**P**	**S**	A	N	**N**	**S**	T	V	K	E	T	V	273
I14	**L**	C	**P**	**S**	G	N	**N**	**S**	T	V	K	E	I	A	273
I15	**L**	C	**P**	**S**	A	N	**N**	**S**	T	V	K	E	T	V	273

Figure 4K

	VII													
F3	A	S	V	M	Y	T	V	V	T	P	M	V	N	P	287
F5	A	A	V	M	Y	A	V	V	T	P	M	L	N	P	287
F6	I	T	V	L	N	T	I	V	T	P	V	L	N	P	290
F12	A	S	V	M	Y	T	V	V	T	P	M	L	N	P	288
I3	M	A	M	M	Y	T	V	V	T	P	M	L	N	P	285
I7	V	S	V	L	Y	A	V	I	V	P	L	F	N	P	292
I8	M	A	M	M	Y	T	V	V	T	P	M	L	N	P	285
I9	M	S	L	M	Y	T	M	V	T	P	M	L	N	P	287
I14	M	A	M	M	Y	T	V	V	T	P	M	L	N	P	287
I15	M	A	M	M	Y	T	V	V	T	P	M	L	N	P	287

	VII													
F3	F	I	Y	S	L	R	N	K	D	V	K	S	V	L	301
F5	F	I	Y	S	L	R	N	S	D	M	K	A	A	L	301
F6	F	I	Y	T	L	R	N	K	D	V	K	E	A	L	304
F12	F	I	Y	S	L	R	N	K	D	V	K	R	A	L	302
I3	F	I	Y	S	L	R	N	R	D	M	K	R	A	L	299
I7	I	I	Y	C	L	R	N	Q	D	V	K	R	A	L	306
I8	F	I	Y	S	L	R	N	R	D	M	K	Q	A	L	299
I9	F	I	Y	S	L	R	N	R	D	I	K	D	A	L	301
I14	F	I	Y	S	L	R	N	R	D	M	K	R	A	L	301
I15	F	I	Y	S	L	R	N	R	D	M	K	E	A	L	301

Figure 4L

F3	K	K	T	L	**C**	E	E	V	**I**	R	S	P	P	S	315
F5	R	K	V	L	A	M	R	F	P	S	K	Q	-		313
F6	R	**R**	T	V	K	G	K	-							311
F12	E	**R**	L	L	E	G	N	C	K	V	H	H	W	T	316
I3	I	**R**	V	I	**C**	S	M	K	**I**	T	L	-			310
I7	R	**R**	T	L	H	L	A	Q	D	Q	E	A	N	T	320
I8	I	**R**	V	T	**C**	S	K	K	**I**	S	L	P	W	-	312
I9	E	K	I	M	**C**	K	K	Q	**I**	P	S	F	L	-	314
I14	I	**R**	V	I	**C**	T	K	K	**I**	S	L	-			312
I15	I	**R**	V	L	**C**	K	K	K	**I**	T	F	C	L	-	314

F3	L	L	H	F	F	L	V	L	C	H	L	P	C	F	329
F5															
F6															
F12	G	-													317
I3															
I7	N	K	G	S	K	I	G	-							327
I8															
I9															
I14															
I15															

Figure 4M

F3	I F C Y -	333
F5		
F6		
F12		
I3		
I7		
I8		
I9		
I14		
I15		

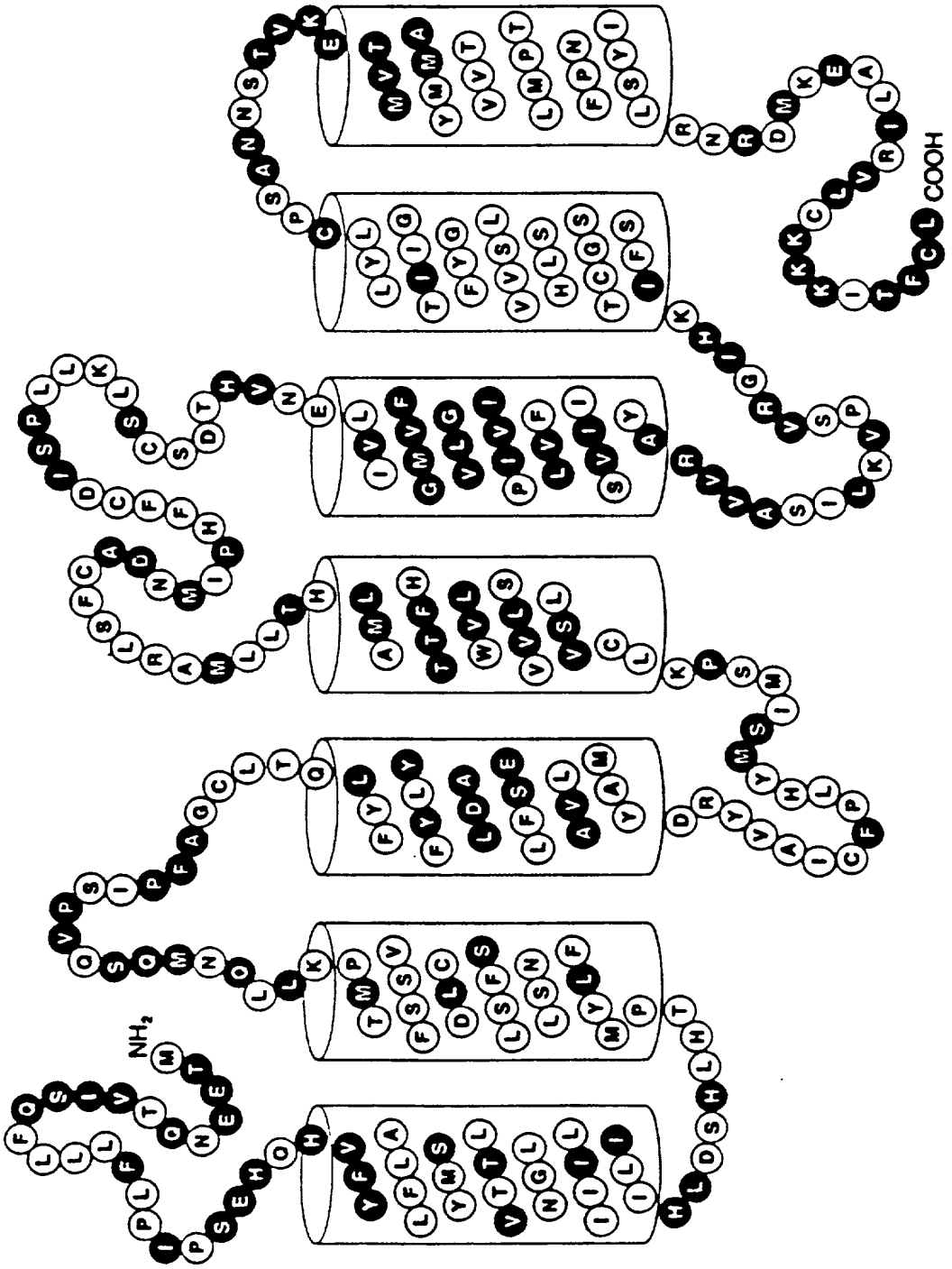


Figure 5

Figure 6A(1)

					V								
F2	R	V	**N**	**E**	V	V	**I**	F	I	V	V	S	L	F
F3	F	L	**N**	D	**L**	V	**I**	Y	F	T	L	V	L	L
F5	H	L	**N**	**E**	**L**	M	**I**	L	T	E	G	A	V	V
F6	Q	V	V	**E**	**L**	V	S	F	G	I	A	F	C	V
F7	H	V	**N**	**E**	**L**	V	**I**	F	V	M	G	G	I	I
F8	F	P	S	H	**L**	T	M	H	L	V	P	V	I	L
F12	F	P	S	H	**L**	I	M	N	L	V	P	V	M	L
F13	F	P	S	H	**L**	I	M	N	L	V	P	V	M	L
F23	F	**L**	N	D	V	I	M	Y	F	A	L	V	L	L
F24	H	E	I	**E**	M	I	**I**	L	V	L	A	A	F	N
I3	Y	I	**N**	**E**	**L**	M	**I**	F	I	M	S	T	L	L
I7	S	T	A	**E**	**L**	T	D	F	V	L	A	I	F	I
I8	Y	V	**N**	**E**	**L**	M	**I**	H	I	M	G	V	I	I
I9	H	D	**N**	**E**	**L**	A	**I**	F	I	L	G	G	P	I
I11	H	L	**N**	**E**	**L**	M	**I**	L	T	E	G	A	V	V
I12	F	P	S	H	**L**	I	M	N	L	V	P	V	M	L
I14	Y	V	**N**	**E**	**L**	M	**I**	Y	I	L	G	G	L	I
I15	H	V	**N**	**E**	**L**	V	**I**	F	V	M	G	G	L	V

Figure 6A(2)

	V												
F2	L	V	L	**P**	**F**	A	L	**I**	I	M	**S**	**Y**	V	R
F3	A	T	V	**P**	L	A	G	**I**	F	Y	**S**	**Y**	F	K
F5	M	V	T	**P**	**F**	V	C	**I**	L	I	**S**	**Y**	I	H
F6	I	H	G	S	C	G	I	T	L	V	**S**	**Y**	A	Y
F7	L	V	I	**P**	**F**	V	L	**I**	I	V	**S**	**Y**	V	R
F8	A	A	I	S	L	S	G	**I**	L	Y	**S**	**Y**	F	K
F12	A	A	I	S	**F**	S	G	**I**	L	Y	**S**	**Y**	F	K
F13	A	A	I	S	**F**	S	G	**I**	L	Y	**S**	**Y**	F	K
F23	A	V	V	**P**	L	L	G	**I**	L	Y	**S**	**Y**	S	K
F24	L	I	S	S	L	L	V	V	L	V	**S**	**Y**	L	F
I3	I	I	I	**P**	**F**	F	L	**I**	V	M	**S**	**Y**	A	R
I7	L	L	G	**P**	L	S	V	T	G	A	**S**	**Y**	M	A
I8	I	V	I	**P**	**F**	V	L	**I**	V	I	**S**	**Y**	A	K
I9	V	V	L	**P**	**F**	L	L	**I**	I	V	**S**	**Y**	A	R
I11	M	V	T	**P**	F	V	C	**I**	L	I	**S**	**Y**	I	H
I12	G	A	I	S	L	S	G	**I**	L	Y	**S**	**Y**	F	K
I14	I	I	I	**P**	**F**	L	L	**I**	V	M	**S**	**Y**	V	R
I15	I	V	I	**P**	**F**	V	L	**I**	I	V	**S**	**Y**	A	R

Figure 6A(3)

F2	**I**	**V**	**S**	**S**	**I**	L	K	V	P	**S**	S	Q	**G**	I
F3	**I**	**V**	**S**	**S**	**I**	C	A	I	S	**S**	V	H	**G**	K
F5	**I**	T	C	A	V	L	R	V	S	**S**	P	R	**G**	G
F6	**I**	I	T	T	**I**	I	K	I	P	**S**	A	R	**G**	R
F7	**I**	**V**	**S**	**S**	**I**	L	K	V	P	**S**	A	R	**G**	I
F8	**I**	**V**	**S**	**S**	**I**	R	S	M	S	**S**	V	Q	**G**	K
F12	**I**	**V**	**S**	**S**	**I**	H	S	I	S	T	V	Q	**G**	K
F13	**I**	**V**	**S**	**S**	**I**	R	S	V	S	**S**	V	K	**G**	K
F23	**I**	**V**	**S**	**S**	**I**	R	A	I	S	T	V	Q	**G**	K
F24	**I**	L	I	A	**I**	L	R	M	N	**S**	A	E	**G**	R
I3	**I**	I	**S**	**S**	**I**	L	K	V	P	**S**	T	Q	**G**	I
I7	**I**	T	G	A	V	M	R	I	P	**S**	A	A	**G**	R
I8	**I**	I	**S**	**S**	**I**	L	K	V	P	**S**	T	Q	S	I
I9	**I**	**V**	**S**	**S**	**I**	F	K	V	P	**S**	S	Q	S	I
I11	**I**	T	W	A	V	L	R	V	S	**S**	P	R	**G**	G
I12	**I**	**V**	**S**	**S**	V	R	S	I	S	**S**	V	Q	**G**	K
I14	I	F	F	**S**	**I**	L	K	F	P	**S**	I	Z	D	I
I15	**V**	**V**	A	**S**	**I**	L	K	V	P	**S**	V	R	**G**	I

Figure 6A(4)

F2	Y	K
F3	Y	K
F5	W	K
F6	H	R
F7	R	K
F8	Y	K
F12	Y	K
F13	Y	K
F23	Y	K
F24	R	K
I3	C	K
I7	H	K
I8	H	K
I9	H	K
I11	W	K
I12	H	K
I14	Y	K
I15	H	K

Figure 6B

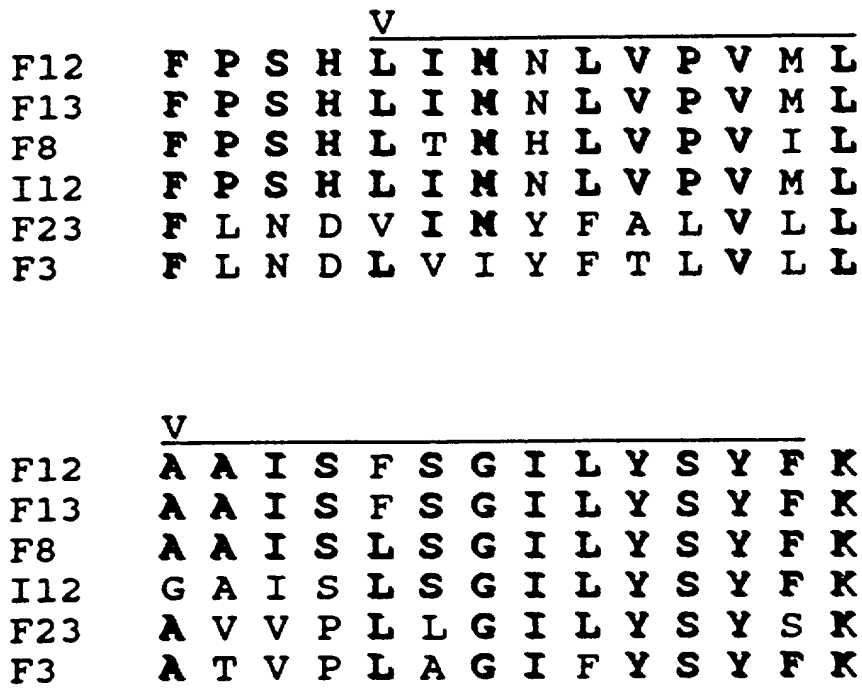

V
F12 F P S H L I M N L V P V M L
F13 F P S H L I M N L V P V M L
F8 F P S H L T M H L V P V I L
I12 F P S H L I M N L V P V M L
F23 F L N D V I M Y F A L V L L
F3 F L N D L V I Y F T L V L L
V
F12 A A I S F S G I L Y S Y F K
F13 A A I S F S G I L Y S Y F K
F8 A A I S L S G I L Y S Y F K
I12 G A I S L S G I L Y S Y F K
F23 A V V P L L G I L Y S Y S K
F3 A T V P L A G I F Y S Y F K

Figure 6B (Continued)

F12	I	V	S	S	I	H	S	I	S	T	V	Q	G	K
F13	I	V	S	S	I	R	S	V	S	S	V	K	G	K
F8	I	V	S	S	I	R	S	M	S	S	V	Q	G	K
I12	I	V	S	S	V	R	S	I	S	S	V	Q	G	K
F23	I	V	S	S	I	R	A	I	S	T	V	Q	G	K
F3	I	V	S	S	I	C	A	I	S	S	S	H	G	K

F12	Y	K
F13	Y	K
F8	Y	K
I12	H	K
F23	Y	K
F3	Y	K

Figure 6C

					V								
F7	H	V	N	E	L	V	I	F	V	M	G	G	I	I
I15	H	V	N	E	L	V	I	F	V	M	G	G	L	V
I3	Y	I	N	E	L	M	I	F	I	M	S	T	L	L
I8	Y	V	N	E	L	M	I	H	I	M	G	V	I	I
I9	H	D	N	E	L	A	I	F	I	L	G	G	P	I
I14	Y	V	N	E	L	M	I	Y	I	L	G	G	L	I

	V												
F7	L	V	I	P	F	V	L	I	I	V	S	Y	V	R
I15	I	V	I	P	F	V	L	I	I	V	S	Y	A	R
I3	I	I	I	P	F	F	L	I	V	M	S	Y	A	R
I8	I	V	I	P	F	V	L	I	V	I	S	Y	A	K
I9	V	V	L	P	F	L	L	I	I	V	S	Y	A	R
I14	I	I	I	P	F	L	L	I	V	M	S	Y	V	R

Figure 6C (Continued)

F7	I	V	S	S	I	L	K	V	P	S	A	R	G	I
I15	V	V	A	S	I	L	K	V	P	S	V	R	G	I
I3	I	I	S	S	I	L	K	V	P	S	T	Q	G	I
I8	I	I	S	S	I	L	K	V	P	S	T	Q	S	I
I9	I	V	S	S	I	F	K	V	P	S	S	Q	S	I
I14	I	F	F	S	I	L	K	F	P	S	I	Q	D	I

F7	R	K
I15	H	K
I3	C	K
I8	H	K
I9	H	K
I14	Y	K

Figure 6D

```
                  V
F5    H L N E L M I L T E G A V V
I11   H L N E L M I L T E G A V V

      V
F5    M V T P F V C I L I S Y I H
I11   M V T P F V C I L I S Y I H

F5    I T C A V L R V S S P R G G
I11   I T W A V L R V S S P R G G

F5    W K
I11   W K
```

Figure 7

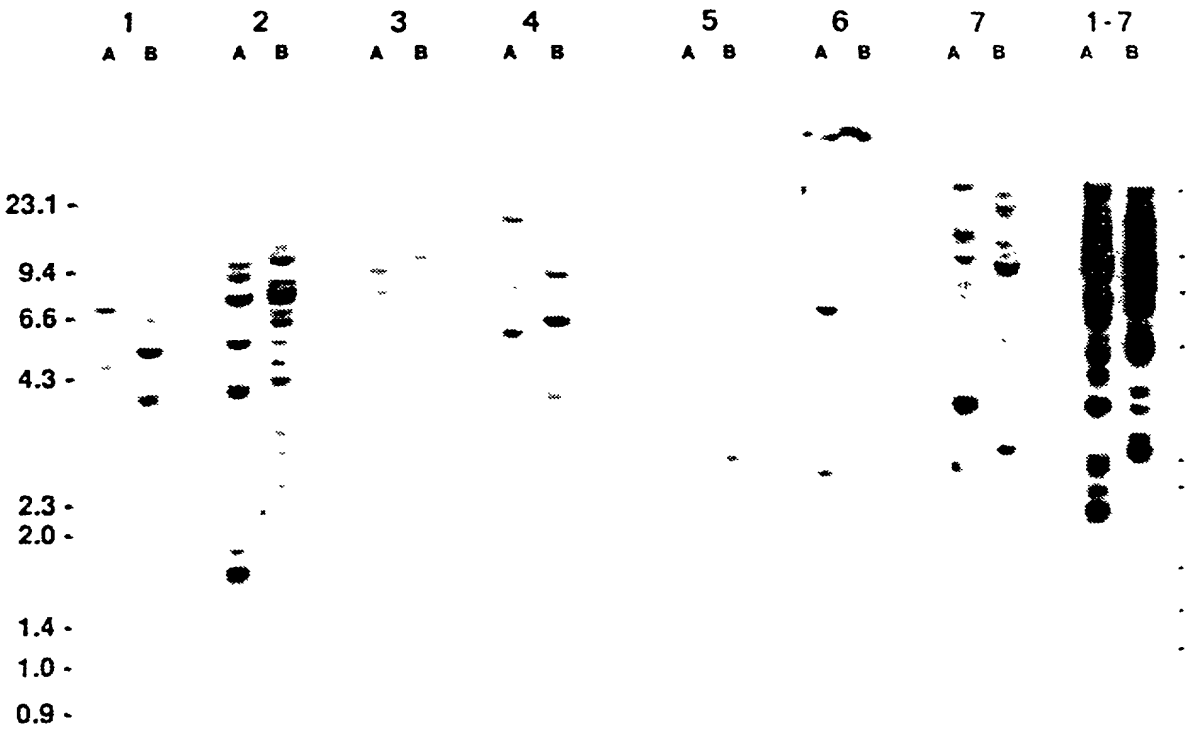


Figure 8

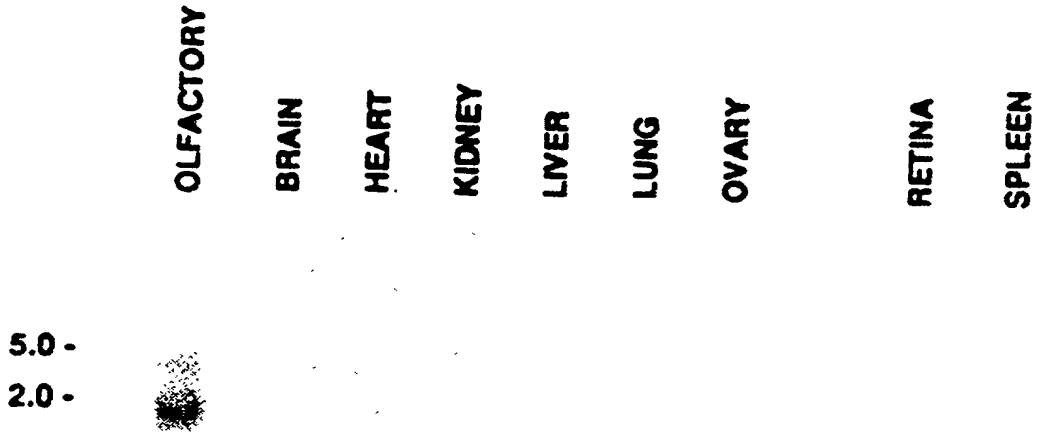

OLFACTORY
BRAIN
HEART
KIDNEY
LIVER
LUNG
OVARY
RETINA
SPLEEN
5.0 -
2.0 -

Figure 9A Translated sequence of F3T.D1S

```
                    10                  20                  30                  40                  50                  60
                    *                   *                   *                   *                   *                   *
ATG GAC TCA AGC AAC AGG ACA AGA GTT TCA GAA TTT CTT CTT CTT GGA TTT GTA GAA AAC
 M   D   S   S   N   R   T   R   V   S   E   F   L   L   L   G   F   V   E   N

                    70                  80                  90                  100                 110                 120
                    *                   *                   *                   *                   *                   *
AAA GAC CTA CAA CCC CTT ATT TAT GGT CTT TTT CTC TCT ATG TAC CTG GTT ACT GTC ATT
 K   D   L   Q   P   L   I   Y   G   L   F   L   S   M   Y   L   V   T   V   I

                    130                 140                 150                 160                 170                 180
                    *                   *                   *                   *                   *                   *
GGA AAC ATA TCC ATT ATT GTG GCT ATC ATT TCA GAT CCC TGT CTG CAC ACC CCC ATG TAT
 G   N   I   S   I   I   V   A   I   I   S   D   P   C   L   H   T   P   M   Y

                    190                 200                 210                 220                 230                 240
                    *                   *                   *                   *                   *                   *
TTC TTC CTC TCT AAC CTG TCC TTT GTG GAC ATC TGT TTC ATT TCA ACC ACT GTT CCA AAC
 F   F   L   S   N   L   S   F   V   D   I   C   F   I   S   T   T   V   P   K

                    250                 260                 270                 280                 290                 300
                    *                   *                   *                   *                   *                   *
ATG TTA GTG AAC ATC CAG ACC CAA AAC AAT GTC ATC ACC TAT GCA GGA TGC ATT ACC CAG
 M   L   V   N   I   Q   T   Q   N   N   V   I   T   Y   A   G   C   I   T   Q
```

30/99

Figure 9B

```
          310         320         330         340         350         360
           *           *           *           *           *           *
ATA TAC TTT TTC TTG CTC TTT GTA GAA TTG GAC AAC TTC TTG CTG ACT ATC ATG GCC TAT
 I   Y   F   F   L   L   F   V   E   L   D   N   F   L   L   T   I   M   A   Y

          370         380         390         400         410         420
           *           *           *           *           *           *
GAC CGT TAC GTA GCC ATC TGT CAC CCC ATG CAC TAC ACA GTT ATC ATG AAC TAC AAG CTC
 D   R   Y   V   A   I   C   H   P   M   H   Y   T   V   I   M   N   Y   K   L

          430         440         450         460         470         480
           *           *           *           *           *           *
TGT GGA TTT CTG GTT CTG GTA TCT TGG ATT GTA AGT GTT CTG CAT GCC TTG TTT CAA AGC
 C   G   F   L   V   L   V   S   W   I   V   S   V   L   H   A   L   F   Q   S

          490         500         510         520         530         540
           *           *           *           *           *           *
TTG ATG ATG TTG GCG CTG CCC TTC TGC ACA CAT CTG GAA ATC CCA CAC TAC TTC TGT GAA
 L   M   M   L   A   L   P   F   C   T   H   L   E   I   P   H   Y   F   C   E

          550         560         570         580         590         600
           *           *           *           *           *           *
CCT AAT CAG GTG ATT CAA CTC ACC TGT TCT GAT GCA TTT CTT AAT GAT CTT GTG ATA TAT
 P   N   Q   V   I   Q   L   T   C   S   D   A   F   L   N   D   L   V   I   Y

          610         620         630         640         650         660
```

Figure 9C

```
                *                   *                   *                   *                   *                   *
TTT ACA CTT GTG CTG CTG GCT ACT GTT CCT CTT GCT GGC ATC TTC TAT TCT TAC TTC AAG
 F   T   L   V   L   L   A   T   V   P   L   A   G   I   F   Y   S   Y   F   K

            670                 680                 690                 700                 710                 720
            *                   *                   *                   *                   *                   *
ATA GTG TCC TCC ATA TGT GCT ATA TCG TCA GTT CAT GGG AAG TAC AAA GCA TTC TCC ACC
 I   V   S   S   I   C   A   I   S   S   V   H   G   K   Y   K   A   F   S   T

            730                 740                 750                 760                 770                 780
            *                   *                   *                   *                   *                   *
TGT GCA TCT CAC CTT TCA GTC GTG TCT TTA TTT TAC TGC ACA GGA CTA GGA GTG TAC CTC
 C   A   S   H   L   S   V   V   S   L   F   Y   C   T   G   L   G   V   Y   L

            790                 800                 810                 820                 830                 840
            *                   *                   *                   *                   *                   *
AGT TCT GCT GCA AAC AAC AGC TCA CAG GCA AGT GCC ACA GCC TCA GTC ATG TAC ACT GTA
 S   S   A   A   N   N   S   S   Q   A   S   A   T   A   S   V   M   Y   T   V

            850                 860                 870                 880                 890                 900
            *                   *                   *                   *                   *                   *
GTT ACC CCT ATG GTG AAC CCT TTT ATC TAT AGT CTT AGG AAT AAA GAT GTT AAG AGT GTT
     PRONUC/TRA   OPTION

V   T   P   M   V   N   P   F   I   Y   S   L   R   N   K   D   V   K   S   V
```

Figure 9D

```
                  910                 920                 930                 940                 950                 960
                   *                   *                   *                   *                   *                   *
CTG AAA AAA ACT CTT TGT GAG GAA GTT ATA AGG AGT CCA CCT TCC CTA CTT CAT TTC TTC
 L   K   K   T   L   C   E   E   V   I   R   S   P   P   S   L   L   H   F   F

                  970                 980                 990                1000
                   *                   *                   *                   *
CTA GTG TTA TGT CAT CTC CCT TGT TTT ATT TTT TGT TAT TAA
 L   V   L   C   H   L   P   C   F   I   F   C   Y   -
```

Translation begun with base no. 57
Translated to base no.1058
Sequence printed from base no. 57 to base no.1058
Sequence numbered beginning with base no. 57

Figure 10A Translated sequence of F5T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG AGC AGC ACC AAC CAG TCC AGT GTC ACC GAG TTC CTC CTC CTG GGA CTC TCC AGG CAG
 M   S   S   T   N   Q   S   S   V   T   E   F   L   L   L   G   L   S   R   Q

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
CCC CAG CAG CAG CAG CTC CTC TTC CTG CTC TTC CTC ATC ATG TAC CTG GCC ACT GTC CTG
 P   Q   Q   Q   Q   L   L   F   L   L   F   L   I   M   Y   L   A   T   V   L

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
GGA AAC CTG CTC ATC ATC CTG GCT ATT GGC ACA GAC TCC CGC CTG CAC ACC CCC ATG TAC
 G   N   L   L   I   I   L   A   I   G   T   D   S   R   L   H   T   P   M   Y

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
TTC TTC CTC AGT AAC CTG TCC TTT GTG GAT GTC TGC TTC TCC TCT ACC ACT GTC CCT AAA
 F   F   L   S   N   L   S   F   V   D   V   C   F   S   S   T   T   V   P   K

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
GTT CTG GCC AAC CAT ATA CTT GGG AGT CAG GCC ATT TCC TTC TCT GGG TGT CTC ACC CAG
 V   L   A   N   H   I   L   G   S   Q   A   I   S   F   S   G   C   L   T   Q
```

Figure 10B

```
          310         320         330         340         350         360
          *           *           *           *           *           *
CTG TAT TTT CTC GCT GTG TTT GGT AAC ATG GAC AAT TTC CTG CTG GCT GTG ATG TCC TAT
 L   Y   F   L   A   V   F   G   N   M   D   N   F   L   L   A   V   M   S   Y

          370         380         390         400         410         420
          *           *           *           *           *           *
GAC CGA TTT GTG GCC ATA TGC CAC CCT TTA CAC TAC ACA ACA AAG ATG ACC CGT CAG CTC
 D   R   F   V   A   I   C   H   P   L   H   Y   T   T   K   M   T   R   Q   L

          430         440         450         460         470         480
          *           *           *           *           *           *
TGT GTC CTG CTT GTT GTG GGG TCA TGG GTT GTA GCC AAC ATG AAT TGT CTG TTG CAC ATA
 C   V   L   L   V   V   G   S   W   V   V   A   N   M   N   C   L   L   H   I

          490         500         510         520         530         540
          *           *           *           *           *           *
CTG CTC ATG GCT CGA CTC TCC TTC TGT GCA GAC AAC ATG ATC CCC CAC TTC TTC TGT GAT
 L   L   M   A   R   L   S   F   C   A   D   N   M   I   P   H   F   F   C   D

          550         560         570         580         590         600
          *           *           *           *           *           *
GGA ACT CCC CTC CTG AAA CTC TCC TGC TCA GAC ACA CAT CTC AAT GAG CTG ATG ATT CTT
 G   T   P   L   L   K   L   S   C   S   D   T   H   L   N   E   L   M   I   L

          610         620         630         640         650         660
```

Figure 10C

```
                *                   *                   *                   *                   *                   *
ACA GAG GGA GCT GTG GTC ATG GTC ACC CCA TTT GTC TGC ATC CTC ATC TCC TAC ATC CAC
 T   E   G   A   V   V   M   V   T   P   F   V   C   I   L   I   S   Y   I   H

              670                 680                 690                 700                 710                 720
                *                   *                   *                   *                   *                   *
ATC ACC TGT GCT GTC CTC AGA GTC TCA TCC CCC AGG GGA GGA TGG AAA TCC TTC TCC ACC
 I   T   C   A   V   L   R   V   S   S   P   R   G   G   W   K   S   F   S   T

              730                 740                 750                 760                 770                 780
                *                   *                   *                   *                   *                   *
TGT GGC TCC CAC CTG GCT GTG GTC TGC CTC TTC TAT GGC ACC GTC ATC GCT GTG TAT TTC
 C   G   S   H   L   A   V   V   C   L   F   Y   G   T   V   I   A   V   Y   F

              790                 800                 810                 820                 830                 840
                *                   *                   *                   *                   *                   *
AAC CCA TCA TCC TCT CAC TTA GCT GGG AGG GAC ATG GCA GCT GCA GTG ATG TAT GCA GTC
     PRONUC/TRA   OPTION

 N   P   S   S   S   H   L   A   G   R   D   M   A   A   A   V   M   Y   A   V
```

Figure 10D

```
                  850                 860                 870                 880                 890                 900
                   *                   *                   *                   *                   *                   *
GTG ACC CCA ATG CTG AAC CCT TTC ATC TAT AGC CTG AGG AAC AGC GAC ATG AAA GCA GCT
 V   T   P   M   L   N   P   F   I   Y   S   L   R   N   S   D   M   K   A   A

                  910                 920                 930                 940
                   *                   *                   *                   *
TTA AGG AAA GTG CTC GCC ATG AGA TTT CCA TCT AAG CAG TAA
 L   R   K   V   L   A   M   R   F   P   S   K   Q   -
```

Translation begun with base no. 62
Translated to base no.1003
Sequence printed from base no. 62 to base no.1003
Sequence numbered beginning with base no. 62

Figure 11A Translated sequence of F6T.D1S

```
          10         20         30         40         50         60
          *          *          *          *          *          *
ATG GCT TGG AGT ACT GGC CAG AAC CTG TCC ACA CCA GGA CCA TTC ATC TTG CTG GGC TTC
 M   A   W   S   T   G   Q   N   L   S   T   P   G   P   F   I   L   L   G   F

          70         80         90         100        110        120
          *          *          *          *          *          *
CCA GGG CCA AGG AGC ATG CGC ATT GGG CTC TTC CTG CTT TTC CTG GTC ATG TAT CTG CTT
 P   G   P   R   S   M   R   I   G   L   F   L   L   F   L   V   M   Y   L   L

          130        140        150        160        170        180
          *          *          *          *          *          *
ACG GTA GTT GGA AAC CTA GCC ATC ATC TCC CTG GTA GGT GCC CAC AGA TGC CTA CAG ACA
 T   V   V   G   N   L   A   I   I   S   L   V   G   A   H   R   C   L   Q   T

          190        200        210        220        230        240
          *          *          *          *          *          *
CCC ATG TAC TTC TTC CTC TGC AAC CTC TCC TTC CTG GAG ATC TGG TTC ACC ACA GCC TGC
 P   M   Y   F   F   L   C   N   L   S   F   L   E   I   W   F   T   T   A   C

          250        260        270        280        290        300
          *          *          *          *          *          *
GTA CCC AAG ACC CTG GCC ACA TTT GCG CCT CGG GGT GGA GTC ATT TCC TTG GCT GGC TGT
 V   P   K   T   L   A   T   F   A   P   R   G   G   V   I   S   L   A   G   C
```

Figure 11B

```
          310         320         330         340         350         360
          *           *           *           *           *           *
GCC ACA CAG ATG TAC TTT GTC TTT TCT TTG GGC TGT ACC GAG TAC TTC CTG CTG GCT GTG
 A   T   Q   M   Y   F   V   F   S   L   G   C   T   E   Y   F   L   L   A   V

          370         380         390         400         410         420
          *           *           *           *           *           *
ATG GCT TAT GAC CGC TAC CTG GCC ATC TGC CTG CCA CTG CGC TAT GGT GGC ATC ATG ACT
 M   A   Y   D   R   Y   L   A   I   C   L   P   L   R   Y   G   G   I   M   T

          430         440         450         460         470         480
          *           *           *           *           *           *
CCT GGG CTG GCG ATG CGG TTG GCC CTG GGA TCC TGG CTG TGT GGG TTT TCT GCA ATC ACA
 P   G   L   A   M   R   L   A   L   G   S   W   L   C   G   F   S   A   I   T

          490         500         510         520         530         540
          *           *           *           *           *           *
GTT CCT GCT ACC CTC ATT GCC CGC CTC TCT TTC TGT GGC TCA CGT GTC ATC AAC CAC TTC
 V   P   A   T   L   I   A   R   L   S   F   C   G   S   R   V   I   N   H   F

          550         560         570         580         590         600
          *           *           *           *           *           *
TTC TGT GAC ATT TCG CCC TGG ATA GTG CTT TCC TGC ACC GAC ACG CAG GTG GTG GAA CTG
 F   C   D   I   S   P   W   I   V   L   S   C   T   D   T   Q   V   V   E   L

          610         620         630         640         650         660
```

Figure 11C

```
                *               *               *               *               *               *
GTG TCC TTT GGC ATT GCC TTC TGT GTT ATT CTG GGC TCG TGT GGT ATC ACA CTA GTC TCC
 V   S   F   G   I   A   F   C   V   I   L   G   S   C   G   I   T   L   V   S

            670             680             690             700             710             720
            *               *               *               *               *               *
TAT GCT TAC ATC ATC ACT ACC ATC ATC AAG ATT CCC TCT GCC CGG GGC CGG CAC CGC GCC
 Y   A   Y   I   I   T   T   I   I   K   I   P   S   A   R   G   R   H   R   A

            730             740             750             760             770             780
            *               *               *               *               *               *
TTC TCA ACC TGC TCA TCC CAT CTC ACT GTG GTG CTG ATT TGG TAT GGC TCC ACC ATC TTC
 F   S   T   C   S   S   H   L   T   V   V   L   I   W   Y   G   S   T   I   F

            790             800             810             820             830             840
            *               *               *               *               *               *
TTG CAT GTG AGG ACC TCG GTA GAG AGC TCC TTG GAC CTC ACC AAA GCT ATC ACA GTG CTG
     PRONUC/TRA    OPTION

 L   H   V   R   T   S   V   E   S   S   L   D   L   T   K   A   I   T   V   L
```

Figure 11D

```
                  850                 860                 870                 880                 890                 900
                   *                   *                   *                   *                   *                   *
AAC ACC ATT GTC ACA CCT GTG CTG AAC CCT TTC ATA TAT ACT CTG AGG AAC AAG GAT GTC
 N   T   I   V   T   P   V   L   N   P   F   I   Y   T   L   R   N   K   D   V

                  910                 920                 930
                   *                   *                   *
AAG GAA GCT CTG CGC AGG ACG GTG AAG GGG AAG TGA
 K   E   A   L   R   R   T   V   K   G   K   -
```

Translation begun with base no. 75
Translated to base no.1010
Sequence printed from base no. 75 to base no.1010
Sequence numbered beginning with base no. 75

Figure 12A Translated sequence of F12T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG GAA TCA GGG AAC AGC ACA AGA AGA TTT TCA AGT TTT TTT CTT CTT GGA TTT ACA GAA
 M   E   S   G   N   S   T   R   R   F   S   S   F   F   L   L   G   F   T   E

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
AAC CCA CAA CTT CAC TTC CTC ATT TTT GCA CTA TTC CTG TCC ATG TAC CTG GTA ACA GTG
 N   P   Q   L   H   F   L   I   F   A   L   F   L   S   M   Y   L   V   T   V

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
CTT GGG AAC CTG CTT ATC ATT ATG GCC ATC ATC ACA CAG TCT CAT TTG CAT ACA CCC ATG
 L   G   N   L   L   I   I   M   A   I   I   T   Q   S   H   L   H   T   P   M

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
TAC TTT TTC CTT GCT AAC CTA TCC TTT GTG GAC ATC TGT TTC ACC TCC ACC ACC ATC CCA
 Y   F   F   L   A   N   L   S   F   V   D   I   C   F   T   S   T   T   I   P

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
```

Figure 12B

```
AAG ATG TTG GTA AAT ATA TAC ACC CAG AGC AAG AGC ATC ACC TAT GAA GAC TGT ATT AGC
 K   M   L   V   N   I   Y   T   Q   S   K   S   I   T   Y   E   D   C   I   S

           310         320         330         340         350         360
            *           *           *           *           *           *
CAG ATG TGT GTC TTC TTG GTT TTC GCA GAA TTG GGC AAC TTT CTC CTG GCT GTG ATG GCC
 Q   M   C   V   F   L   V   F   A   E   L   G   N   F   L   L   A   V   M   A

           370         380         390         400         410         420
            *           *           *           *           *           *
TAT GAC CGA TAT GTG GCT A-C TGT CAC CCA CTG TGT TAC ACA GTC ATT GTG AAC CAC CGG
 Y   D   R   Y   V   A   X   C   H   P   L   C   Y   T   V   I   V   N   H   R

           430         440         450         460         470         480
            *           *           *           *           *           *
CTC TGT ATC CTG CTG CTT CTG CTG TCC TGG GTT ATC AGC ATT TTC CAT GCC TTC ATA CAG
 L   C   I   L   L   L   L   L   S   W   V   I   S   I   F   H   A   F   I   Q

           490         500         510         520         530         540
            *           *           *           *           *           *
AGC TTA ATT GTG CTA CAG TTG ACC TTC TGT GGA GAT GTG AAA ATC CCT CAC TTC TTC TGT
 S   L   I   V   L   Q   L   T   F   C   G   D   V   K   I   P   H   F   F   C

           550         560         570         580         590         600
            *           *           *           *           *           *
GAA CTT AAT CAG CTG TCC CAA CTC ACC TGT TCA GAC AAC TTT CCA AGT CAC CTC ATA ATG
 E   L   N   Q   L   S   Q   L   T   C   S   D   N   F   P   S   H   L   I   M
```

Figure 12C

```
          610         620         630         640         650         660
           *           *           *           *           *           *
AAT CTT GTA CCT GTT ATG TTG GCA GCC ATT TCC TTC AGT GGC ATC CTT TAC TCT TAT TTC
 N   L   V   P   V   M   L   A   A   I   S   F   S   G   I   L   Y   S   Y   F

          670         680         690         700         710         720
           *           *           *           *           *           *
AAG ATA GTA TCC TCC ATA CAT TCT ATC TCC ACA GTT CAG GGG AAG TAC AAG GCA TTT TCT
 K   I   V   S   S   I   H   S   I   S   T   V   Q   G   K   Y   K   A   F   S

          730         740         750         760         770         780
           *           *           *           *           *           *
ACT TGT GCC TCT CAC CTT TCC ATT GTC TCC TTA TTT TAT AGT ACA GGC CTC GGA GTG TAC
 T   C   A   S   H   L   S   I   V   S   L   F   Y   S   T   G   L   G   V   Y

          790         800         810         820         830         840
           *           *           *           *           *           *
GTC AGT TCT GCT GTG GTC CAA AGC TCA CAT TCT GCT GCA AGT GCT TCG GTC ATG TAT ACT
     PRONUC/TRA   OPTION

 V   S   S   A   V   V   Q   S   S   H   S   A   A   S   A   S   V   M   Y   T
```

Figure 12D

```
                  850                 860                 870                 880                 890                 900
                   *                   *                   *                   *                   *                   *
GTG GTC ACC CCC ATG CTG AAC CCC TTC ATT TAT AGT CTA AGG AAT AAA GAT GTG AAG AGA
 V   V   T   P   M   L   N   P   F   I   Y   S   L   R   N   K   D   V   K   R

                  910                 920                 930                 940                 950
                   *                   *                   *                   *                   *
GCT CTG GAA AGA CTG TTA GAA GGA AAC TGT AAA GTG CAT CAT TGG ACT GGA TGA
 A   L   E   R   L   L   E   G   N   C   K   V   H   H   W   T   G   -
```

Translation begun with base no. 173
Translated to base no.1126
Sequence printed from base no. 173 to base no.1126
Sequence numbered beginning with base no. 173

Figure 13A Translated sequence of I3T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG AAC AAT CAA ACT TTC ATC ACC CAA TTC CTT CTC CTG GGA CTG CCC ATC CCT GAA GAA
 M   N   N   Q   T   F   I   T   Q   F   L   L   L   G   L   P   I   P   E   E

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
CAT CAG CAC CTG TTC TAT GCC TTG TTC CTG GTC ATG TAC CTC ACC ACC ATC TTG GGA AAC
 H   Q   H   L   F   Y   A   L   F   L   V   M   Y   L   T   T   I   L   G   N

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
TTG CTA ATC ATT GTA CTT GTT CAA CTG GAC TCC CAG CTC CAC ACA CCT ATG TAT TTG TTT
 L   L   I   I   V   L   V   Q   L   D   S   Q   L   H   T   P   M   Y   L   F

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
CTC AGC AAT TTG TCT TTC TCT GAT CTA TGT TTT TCC TCT GTC ACA ATG CCC AAG CTG CTG
 L   S   N   L   S   F   S   D   L   C   F   S   S   V   T   M   P   K   L   L

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
CAG AAC ATG AGG AGC CAG GAC ACA TCC ATT CCC TAT GGA GGC TGC CTG GCA CAA ACA TAC
 Q   N   M   R   S   Q   D   T   S   I   P   Y   G   G   C   L   A   Q   T   Y
```

Figure 13B

```
          310         320         330         340         350         360
           *           *           *           *           *           *
TTC TTT ATG GTT TTT GGA GAT ATG GAG AGT TTC CTT CTT GTG GCC ATG GCC TAT GAC CGC
 F   F   M   V   F   G   D   M   E   S   F   L   L   V   A   M   A   Y   D   R

          370         380         390         400         410         420
           *           *           *           *           *           *
TAT GTG GCC ATG TGC TTC CCT CTG CAT TAC ACC AGC ATC ATG AGC CCC AAG CTC TGT ACT
 Y   V   A   I   C   F   P   L   H   Y   T   S   I   M   S   P   K   L   C   T

          430         440         450         460         470         480
           *           *           *           *           *           *
TGT CTA GTG CTG TTA TTG TGG ATG CTG ACG ACA TCC CAT GCC ATG ATG CAC ACA CTG CTT
 C   L   V   L   L   L   W   M   L   T   T   S   H   A   M   M   H   T   L   L

          490         500         510         520         530         540
           *           *           *           *           *           *
GCA GCA AGA TTG TCT TTT TGT GAG AAC AAT GTG GTC CTC AAC TTC TTC TGT GAC CTA TTT
 A   A   R   L   S   F   C   E   N   N   V   V   L   N   F   F   C   D   L   F

          550         560         570         580         590         600
           *           *           *           *           *           *
GTT CTC CTA AAG CTG GCC TGC TCA GAC ACT TAT ATT AAT GAG TTG ATG ATA TTT ATC ATG
 V   L   L   K   L   A   C   S   D   T   Y   I   N   E   L   M   I   F   I   M

          610         620         630         640         650         660
```

Figure 13C

```
                *               *               *               *               *               *
AGT ACA CTC CTC ATT ATT ATT CCA TTC TTC CTC ATT GTT ATG TCC TAT GCA AGG ATC ATA
 S   T   L   L   I   I   I   P   F   F   L   I   V   M   S   Y   A   R   I   I

            670             680             690             700             710             720
                *               *               *               *               *               *
TCC TCT ATT CTT AAG GTT CCA TCT ACC CAA GGC ATC TGC AAG GTC TTC TCT ACC TGT GGT
 S   S   I   L   K   V   P   S   T   Q   G   I   C   K   V   F   S   T   C   G

            730             740             750             760             770             780
                *               *               *               *               *
TCC CAT CTG TCT GTA GTA TCA CTG TTC TAT GGG ACA ATT ATT GGT CTC TAC TTA TGT CCA
 S   H   L   S   V   V   S   L   F   Y   G   T   I   I   G   L   Y   L   C   P
```

Figure 14A Translated sequence of I7T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG GAG CGA AGG AAC CAC AGT GGG AGA GTG AGT GAA TTT GTG TTG CTG GGT TTC CCA GCT
 M   E   R   R   N   H   S   G   R   V   S   E   F   V   L   L   G   F   P   A

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
CCT GCC CCA CTG CGA GTA CTA CTA TTT TTC CTT TCT CTT CTG G-C TAT GTG TTG GTG TTG
 P   A   P   L   R   V   L   L   F   F   L   S   L   L   X   Y   V   L   V   L

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
ACT GAA AAC ATG CTC ATC ATT ATA GCA ATT AGG AAC CAC CCA ACC CTC CAC AAA CCC ATG
 T   E   N   M   L   I   I   I   A   I   R   N   H   P   T   L   H   K   P   M

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
TAT TTT TTC TTG GCT AAT ATG TCA TTT CTG GAG ATT TGG TAT GTC ACT GTT ACG ATT CCT
 Y   F   F   L   A   N   M   S   F   L   E   I   W   Y   V   T   V   T   I   P

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
AAG ATG CTC GCT GGC TTC ATT GGT TCC AAG GAG AAC CAT GGA CAG CTG ATC TCC TTT GAG
 K   M   L   A   G   F   I   G   S   K   E   N   H   G   Q   L   I   S   F   E
```

Figure 14B

```
          310        320        330        340        350        360
          *          *          *          *          *          *
GCA TGC ATG ACA CAA CTC TAC TTT TTC CTG GGC TTG GGT TGC ACA GAG TGT GTC CTT CTT
  A   C   M   T   Q   L   Y   F   F   L   G   L   G   C   T   E   C   V   L   L

          370        380        390        400        410        420
          *          *          *          *          *          *
GCT GTG ATG GCC TAT GAC CGC TAT GTG GCT ATC TGT CAT CCA CTC CAC TAC CCC GTC ATT
  A   V   M   A   Y   D   R   Y   V   A   I   C   H   P   L   H   Y   P   V   I

          430        440        450        460        470        480
          *          *          *          *          *          *
GTC AGT AGC CGG CTA TGT GTG CAG ATG GCA GCT GGA TCC TGG GCT GGA GGT TTT GGT ATC
  V   S   S   R   L   C   V   Q   M   A   A   G   S   W   A   G   G   F   G   I

          490        500        510        520        530        540
          *          *          *          *          *          *
TCC ATG GTT AAA GTT TTC CTT ATT TCT CGC CTG TCT TAC TGT GGC CCC AAC ACC ATC AAC
  S   M   V   K   V   F   L   I   S   R   L   S   Y   C   G   P   N   T   I   N

          550        560        570        580        590        600
          *          *          *          *          *          *
CAC TTT TTC TGT GAT GTG TCT CCA TTG CTC AAC CTG TCA TGC ACT GAC ATG TCC ACA GCA
  H   F   F   C   D   V   S   P   L   L   N   L   S   C   T   D   M   S   T   A
```

Figure 14C

```
          610         620         630         640         650         660
           *           *           *           *           *           *
GAG CTT ACA GAC TTT GTC CTG GCC ATT TTT ATT CTG CTG GGA CCG CTC TCT GTC ACT GGG
 E   L   T   D   F   V   L   A   I   F   I   L   L   G   P   L   S   V   T   G

          670         680         690         700         710         720
           *           *           *           *           *           *
GCA TCC TAC ATG GCC ATC ACA GGT GCT GTG ATG CGC ATC CCC TCA GCT GCT GGC CGC CAT
 A   S   Y   M   A   I   T   G   A   V   M   R   I   P   S   A   A   G   R   H

          730         740         750         760         770         780
           *           *           *           *           *           *
AAA GCC TTT TCA ACC TGT GCC TCC CAC CTC ACT GTT GTG ATC ATC TTC TAT GCA GCC AGT
 K   A   F   S   T   C   A   S   H   L   T   V   V   I   I   F   Y   A   A   S

          790         800         810         820         830         840
           *           *           *           *           *           *
ATT TTC ATC TAT GCC AGG CCT AAG GCA CTC TCA GCT TTT GAC ACC AAC AAG CTG GTC TCT
 I   F   I   Y   A   R   P   K   A   L   S   A   F   D   T   N   K   L   V   S

          850         860         870         880         890         900
           *           *           *           *           *           *
GTA CTC TAC GCT GTC ATT GTA CCG TTG TTC AAT CCC ATC ATC TAC TGC TTG CGC AAC CAA
     PRONUC/TRA   OPTION

 V   L   Y   A   V   I   V   P   L   F   N   P   I   I   Y   C   L   R   N   Q
```

Figure 14D

```
                  910                 920                 930                 940                 950                 960
                   *                   *                   *                   *                   *                   *
GAT GTC AAA AGA GCG CTA CGT CGC ACG CTG CAC CTG GCC CAG GAC CAG GAG GCC AAT ACC
 D   V   K   R   A   L   R   R   T   L   H   L   A   Q   D   Q   E   A   N   T

                  970                 980
                   *                   *
AAC AAA GGC AGC AAA ATT GGT TAG
 N   K   G   S   K   I   G   -
```

Translation begun with base no. 119
Translated to base no.1102
Sequence printed from base no. 119 to base no.1102
Sequence numbered beginning with base no. 119

Figure 15A Translated sequence of I8T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG AAC AAC AAA ACT GTC ATC ACC CAT TTC CTC CTC CTG GGA TTG CCC ATC CCC CCA GAG
 M   N   N   K   T   V   I   T   H   F   L   L   L   G   L   P   I   P   P   E

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
CAC CAG CAA CTG TTC TTT GCC CTG TTC CTG ATC ATG TAC CTC ACC ACC TTT CTG GGA AAC
 H   Q   Q   L   F   F   A   L   F   L   I   M   Y   L   T   T   F   L   G   N

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
CTG CTA ATT GTT GTC CTT GTT CAA CTG GAC TCT CAT CTC CAC ACA CCC ATG TAC TTG TTT
 L   L   I   V   V   L   V   Q   L   D   S   H   L   H   T   P   M   Y   L   F

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
CTC AGC AAC TTG TCC TTC TCT GAT CTC TGC TTT TCC TCT GTT ACA ATG CTG AAA TTG CTG
 L   S   N   L   S   F   S   D   L   C   F   S   S   V   T   M   L   K   L   L

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
CAA AAT ATA CAG AGC CAA GTA CCA TCT ATA TCC TAT GCA GGA TGC CTG ACA CAG ATA TTC
 Q   N   I   Q   S   Q   V   P   S   I   S   Y   A   G   C   L   T   Q   I   F
```

Figure 15B

```
          310        320        330        340        350        360
          *          *          *          *          *          *
TTC TTT TTG TTG TTT GGC TAC CTT GGG AAT TTC CTT CTT GTA GCC ATG GCC TAT GAC CGC
 F   F   L   L   F   G   Y   L   G   N   F   L   L   V   A   M   A   Y   D   R

          370        380        390        400        410        420
          *          *          *          *          *          *
TAT GTG GCC ATC TGC TTC CCT CTG CAT TAT ACC AAC ATC ATG AGC CAT AAG CTC TGT ACT
 Y   V   A   I   C   F   P   L   H   Y   T   N   I   M   S   H   K   L   C   T

          430        440        450        460        470        480
          *          *          *          *          *          *
TGT CTC CTG CTG GTA TTT TGG ATA ATG ACA TCA TCT CAT GCC ATG ATG CAC ACC CTG CTT
 C   L   L   L   V   F   W   I   M   T   S   S   H   A   M   M   H   T   L   L

          490        500        510        520        530        540
          *          *          *          *          *          *
GCA GCA AGA TTG TCT TTT TGT GAG AAC AAT GTA CTC CTC AAC TTT TTC TGT GAC CTG TTT
 A   A   R   L   S   F   C   E   N   N   V   L   L   N   F   F   C   D   L   F

          550        560        570        580        590        600
          *          *          *          *          *          *
GTT CTC CTA AAG TTG GCC TGC TCA GAC ACT TAT GTT AAT GAG TTG ATG ATA CAT ATC ATG
 V   L   L   K   L   A   C   S   D   T   Y   V   N   E   L   M   I   H   I   M

          610        620        630        640        650        660
```

Figure 15C

```
                *                   *                   *                   *                   *                   *
GGC GTG ATC ATC ATT GTT ATT CCA TTC GTG CTC ATT GTT ATA TCC TAT GCC AAG ATC ATC
 G   V   I   I   I   V   I   P   F   V   L   I   V   I   S   Y   A   K   I   I

              670                 680                 690                 700                 710                 720
              *                   *                   *                   *                   *                   *
TCC TCC ATT CTT AAG GTT CCA TCT ACT CAA AGC ATT CAC AAG GTC TTC TCC ACT TGT GGT
 S   S   I   L   K   V   P   S   T   Q   S   I   H   K   V   F   S   T   C   G

              730                 740                 750                 760                 770                 780
              *                   *                   *                   *                   *                   *
TCT CAT CTC TCT GTG GTG TCT CTG TTC TAC GGG ACA ATT ATT GGT CTC TAT TTA TGT CCA
 S   H   L   S   V   V   S   L   F   Y   G   T   I   I   G   L   Y   L   C   P

              790                 800                 810                 820                 830                 840
              *                   *                   *                   *                   *                   *
TCA GGT GAT AAT TTT AGT CTA AAG GGG TCT GCC ATG GCT ATG ATG TAC ACA GTG GTA ACT
     PRONUC/TRA   OPTION

 S   G   D   N   F   S   L   K   G   S   A   M   A   M   M   Y   T   V   V   T

              850                 860                 870                 880                 890                 900
              *                   *                   *                   *                   *                   *
CCA ATG CTG AAC CCG TTC ATC TAC AGC CTA AGA AAC AGA GAC ATG AAG CAG GCC CTA ATA
 P   M   L   N   P   F   I   Y   S   L   R   N   R   D   M   K   Q   A   L   I
```

Figure 15D

```
                  910                 920                 930                  9
                   *                   *                   *
AGA GTT ACC TGT AGC AAG AAA ATC TCT CTG CCA TGG TAG
 R   V   T   C   S   K   K   I   S   L   P   W   -
```

Translation begun with base no. 57
Translated to base no. 995
Sequence printed from base no. 57 to base no. 995
Sequence numbered beginning with base no. 57

Figure 16A Translated sequence of I9T.D1S

```
                    10                  20                  30                  40                  50                  60
                    *                   *                   *                   *                   *                   *
ATG ACT AGA AGA AAC CAA ACT GCC ATC TCT CAG TTC TTC CTT CTG GGC CTG CCA TTC CCC
 M   T   R   R   N   Q   T   A   I   S   Q   F   F   L   L   G   L   P   F   P

                    70                  80                  90                  100                 110                 120
                    *                   *                   *                   *                   *                   *
CCA GAG TAC CAA CAC CTG TTC TAT GCC CTG TTC CTG GCC ATG TAC CTC ACC ACT CTC CTG
 P   E   Y   Q   H   L   F   Y   A   L   F   L   A   M   Y   L   T   T   L   L

                    130                 140                 150                 160                 170                 180
                    *                   *                   *                   *                   *                   *
GGG AAC CTC ATC ATC ATC ATC CTC ATT CTA CTG GAC TCC CAT CTC CAC ACA CCC ATG TAC
 G   N   L   I   I   I   I   L   I   L   L   D   S   H   L   H   T   P   M   Y

                    190                 200                 210                 220                 230                 240
                    *                   *                   *                   *                   *                   *
TTG TTT CTC AGC AAT TTA TCC TTT GCC GAC CTC TGT TTT TCC TCT GTC ACA ATG CCC AAG
 L   F   L   S   N   L   S   F   A   D   L   C   F   S   S   V   T   M   P   K

                    250                 260                 270                 280                 290                 300
```

Figure 16B

```
                *                   *                   *                   *                   *                   *
TTG TTG CAG AAC ATG CAG AGC CAA GTT CCA TCC ATC CCC TAT GCA GGG TGC CTG GCA CAG
 L   L   Q   N   M   Q   S   Q   V   P   S   I   P   Y   A   G   C   L   A   Q

          310                 320                 330                 340                 350                 360
          *                   *                   *                   *                   *                   *
ATA TAC TTC TTT CTG TTT TTT GGA GAC CTT GGA AAC TTC CTG CTT GTG GCC ATG GCC TAT
 I   Y   F   F   L   F   F   G   D   L   G   N   F   L   L   V   A   M   A   Y

          370                 380                 390                 400                 410                 420
          *                   *                   *                   *                   *                   *
GAC CGC TAT GTG GCC ATC TGC TTC CCC CTT CAT TAC ATG AGC ATC ATG AGC CCC AAG CTC
 D   R   Y   V   A   I   C   F   P   L   H   Y   M   S   I   M   S   P   K   L

          430                 440                 450                 460                 470                 480
          *                   *                   *                   *                   *                   *
TGT GTG AGT CTG GTG GTG CTG TCC TGG GTG CTG ACT ACC TTC CAT GCC ATG CTG CAC ACC
 C   V   S   L   V   V   L   S   W   V   L   T   T   F   H   A   M   L   H   T

          490                 500                 510                 520                 530                 540
          *                   *                   *                   *                   *                   *
CTG CTC ATG GCC AGA TTG TCA TTC TGT GAG GAC AGT GTG ATC CCT CAC TAT TTC TGT GAT
 L   L   M   A   R   L   S   F   C   E   D   S   V   I   P   H   Y   F   C   D

          550                 560                 570                 580                 590                 600
          *                   *                   *                   *                   *                   *
ATG TCT ACT CTG CTG AAA GTG GCT TGT TCT GAC ACC CAT GAT AAT GAA TTA GCA ATA TTT
 M   S   T   L   L   K   V   A   C   S   D   T   H   D   N   E   L   A   I   F
```

Figure 16C

```
                610         620         630         640         650         660
                *           *           *           *           *           *
ATC TTA GGG GGC CCT ATA GTT GTA CTA CCT TTC CTT CTC ATC ATT GTT TCT TAT GCA AGA
 I   L   G   G   P   I   V   V   L   P   F   L   L   I   I   V   S   Y   A   R

                670         680         690         700         710         720
                *           *           *           *           *           *
ATT GTT TCC TCC ATC TTC AAG GTC CCT TCT TCT CAA AGC ATC CAT AAA GCC TTC TCC ACC
 I   V   S   S   I   F   K   V   P   S   S   Q   S   I   H   K   A   F   S   T

                730         740         750         760         770         780
                *           *           *           *           *           *
TGT GGC TCC CAC CTG TCT GTG GTG TCA CTG TTC TAT GGG ACA GTC ATT GGT CTC TAC TTA
 C   G   S   H   L   S   V   V   S   L   F   Y   G   T   V   I   G   L   Y   L

                790         800         810         820         830         840
                *           *           *           *           *           *
TGT CCT TCA GCT AAT AAC TCC ACT GTG AAG GAG ACT GTC ATG TCT TTG ATG TAC ACA ATG
     PRONUC/TRA    OPTION

 C   P   S   A   N   N   S   T   V   K   E   T   V   M   S   L   M   Y   T   M
```

Figure 16D

```
                  850                 860                 870                 880                 890                 900
                   *                   *                   *                   *                   *                   *
GTG ACA CCC ATG CTG AAC CCC TTC ATC TAC AGC CTA AGA AAC AGA GAC ATA AAA GAT GCA
 V   T   P   M   L   N   P   F   I   Y   S   L   R   N   R   D   I   K   D   A

                  910                 920                 930                 940
                   *                   *                   *                   *
TTA GAA AAA ATA ATG TGC AAA AAG CAA ATT CCC TCC TTT CTA TGA
 L   E   K   I   M   C   K   K   Q   I   P   S   F   L   -
```

Translation begun with base no. 200
Translated to base no.1144
Sequence printed from base no. 200 to base no.1144
Sequence numbered beginning with base no. 200

Figure 17A Translated sequence of I14T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG ACT GGA AAT AAC CAA ACT TTG ATC TTG GAG TTC CTC CTC CTG GGT CTG CCC ATC CCA
 M   T   G   N   N   Q   T   L   I   L   E   F   L   L   L   G   L   P   I   P

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
TCA GAG TAT CAT CTC CTG TTC TAT GCC CTG TTC CTG GCC ATG TAC CTC ACC ATC ATC CTG
 S   E   Y   H   L   L   F   Y   A   L   F   L   A   M   Y   L   T   I   I   L

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
GGA AAC CTG CTA ATC ATT GTC CTT GTT CGA CTG GAC TCT CAT CTC CAC ATG CCC ATG TAC
 G   N   L   L   I   I   V   L   V   R   L   D   S   H   L   H   M   P   M   Y

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
TTG TTT CTC AGC AAC TTG TCC TTC TCT GAC CTC TGC TTT TCC TCT GTC ACA ATG CCC AAA
 L   F   L   S   N   L   S   F   S   D   L   C   F   S   S   V   T   M   P   K

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
TTG CTT CAG AAC ATG CAG AGC CAA GTA CCA TCT ATA TCC TAT ACA GGC TGC CTG ACA CAG
 L   L   Q   N   M   Q   S   Q   V   P   S   I   S   Y   T   G   C   L   T   Q
```

Figure 17B

```
                310                 320                 330                 340                 350                 360
                 *                   *                   *                   *                   *                   *
CTG TAC TTC TTT ATG GTT TTT GGA GAT ATG GAG AGC TTC CTT CTT GTG GTC ATG GCC TAT
 L   Y   F   F   M   V   F   G   D   M   E   S   F   L   L   V   V   M   A   Y

                370                 380                 390                 400                 410                 420
                 *                   *                   *                   *                   *                   *
GAC CGC TAT GTG GCC ATT TGC TTT CCT TTG CGT TAC ACC ACC ATC ATG AGC ACC AAG TTC
 D   R   Y   V   A   I   C   F   P   L   R   Y   T   T   I   M   S   T   K   F

                430                 440                 450                 460                 470                 480
                 *                   *                   *                   *                   *                   *
TGT GCT TCA CTA GTG CTA CTT CTG TGG ATG CTG ACG ATG ACC CAT GCC CTG CTG CAT ACC
 C   A   S   L   V   L   L   L   W   M   L   T   M   T   H   A   L   L   H   T

                490                 500                 510                 520                 530                 540
                 *                   *                   *                   *                   *                   *
CTA CTC ATT GCT AGA TTG TCT TTT TGT GAG AAG AAT GTG ATT CTT CAC TTT TTC TGT GAC
 L   L   I   A   R   L   S   F   C   E   K   N   V   I   L   H   F   F   C   D

                550                 560                 570                 580                 590                 600
                 *                   *                   *                   *                   *                   *
ATT TCT GCT CTT CTG AAG TTG TCC TGC TCA GAC ATT TAT GTT AAT GAG CTG ATG ATA TAT
 I   S   A   L   L   K   L   S   C   S   D   I   Y   V   N   E   L   M   I   Y

                610                 620                 630                 640                 650                 660
```

Figure 17C

```
                *                   *                   *                   *                   *                   *
ATC TTG GGT GGA CTC ATC ATT ATT ATC CCA TTC CTA TTA ATT GTT ATG TCC TAT GTT AGA
 I   L   G   G   L   I   I   I   I   P   F   L   L   I   V   M   S   Y   V   R

            670                 680                 690                 700                 710                 720
            *                   *                   *                   *                   *                   *
ATT TTC TTC TCC ATT TTG AAG TTT CCA TCT ATT CAG GAC ATC TAC AAG GTA TTC TCA ACC
 I   F   F   S   I   L   K   F   P   S   I   Q   D   I   Y   K   V   F   S   T

            730                 740                 750                 760                 770                 780
            *                   *                   *                   *                   *                   *
TGT GGT TCC CAT CTG TCT GTG GTG ACC TTG TTT TAT GGG ACA ATT TTT GGT ATC TAC TTA
 C   G   S   H   L   S   V   V   T   L   F   Y   G   T   I   F   G   I   Y   L

            790                 800                 810                 820                 830                 840
            *                   *                   *                   *                   *                   *
TGT CCA TCA GGT AAT AAT TCT ACT GTG AAG GAG ATT GCC ATG GCT ATG ATG TAC ACA GTG
     PRONUC/TRA   OPTION

 C   P   S   G   N   N   S   T   V   K   E   I   A   M   A   M   M   Y   T   V

            850                 860                 870                 880                 890                 900
            *                   *                   *                   *                   *                   *
GTG ACT CCC ATG CTG AAT CCC TTC ATC TAC AGC CTG AGG AAC AGA GAC ATG AAA AGG GCC
 V   T   P   M   L   N   P   F   I   Y   S   L   R   N   R   D   M   K   R   A
```

Figure 17D

```
                910               920               930               9
                 *                 *                 *
CTA ATA AGA GTT ATC TGC ACT AAG AAA ATC TCT CTG TAA
 L   I   R   V   I   C   T   K   K   I   S   L   -
```

Translation begun with base no. 64
Translated to base no.1002
Sequence printed from base no. 64 to base no.1002
Sequence numbered beginning with base no. 64

Figure 18A Translated sequence of I15T.D1S

```
                10                  20                  30                  40                  50                  60
                *                   *                   *                   *                   *                   *
ATG ACA GAA GAG AAC CAA ACT GTG ATC TCC CAG TTC CTT CTC CTT TTC CTG CCC ATC CCC
 M   T   E   E   N   Q   T   V   I   S   Q   F   L   L   L   F   L   P   I   P

                70                  80                  90                  100                 110                 120
                *                   *                   *                   *                   *                   *
TCA GAG CAC CAG CAC GTG TTC TAC GCC CTG TTC CTG TCC ATG TAC CTC ACC ACT GTC CTG
 S   E   H   Q   H   V   F   Y   A   L   F   L   S   M   Y   L   T   T   V   L

                130                 140                 150                 160                 170                 180
                *                   *                   *                   *                   *                   *
GGG AAC CTC ATC ATC ATC ATC CTC ATT CAC CTG GAC TCC CAT CTC CAC ACA CCC ATG TAC
 G   N   L   I   I   I   I   L   I   H   L   D   S   H   L   H   T   P   M   Y

                190                 200                 210                 220                 230                 240
                *                   *                   *                   *                   *                   *
TTG TTT CTC AGC AAC TTG TCC TTC TCT GAT CTC TGC TTT TCC TCT GTT ACG ATG CCC AAG
 L   F   L   S   N   L   S   F   S   D   L   C   F   S   S   V   T   M   P   K

                250                 260                 270                 280                 290                 300
                *                   *                   *                   *                   *                   *
TTG TTG CAG AAC ATG CAG AGC CAA GTT CCA TCC ATC CCC TTT GCA GGC TGC CTG ACA CAA
```

Figure 18B

```
          310         320         330         340         350         360
           *           *           *           *           *           *
TTA TAC TTT TAC CTG TAT TTT GCA GAC CTT GAG AGC TTC CTG CTT GTG GCC ATG GCC TAT
 L   Y   F   Y   L   Y   F   A   D   L   E   S   F   L   L   V   A   M   A   Y

          370         380         390         400         410         420
           *           *           *           *           *           *
GAC CGC TAT GTG GCC ATC TGC TTC CCC CTT CAT TAC ATG AGC ATC ATG AGC CCC AAG CTC
 D   R   Y   V   A   I   C   F   P   L   H   Y   M   S   I   M   S   P   K   L

          430         440         450         460         470         480
           *           *           *           *           *           *
TGT GTG AGT CTG GTG GTG CTG TCC TGG GTG CTG ACC ACC TTC CAT GCC ATG CTG CAC ACC
 C   V   S   L   V   V   L   S   W   V   L   T   T   F   H   A   M   L   H   T

          490         500         510         520         530         540
           *           *           *           *           *           *
CTG CTC ATG GCC AGA TTG TCA TTC TGT GCG GAC AAT ATG ATC CCC CAC TTT TTC TGT GAT
 L   L   M   A   R   L   S   F   C   A   D   N   M   I   P   H   F   F   C   D

          550         560         570         580         590         600
           *           *           *           *           *           *
ATA TCT CCT TTA TTG AAA CTG TCC TGC TCT GAC ACG CAT GTT AAT GAG TTG GTG ATA TTT
 I   S   P   L   L   K   L   S   C   S   D   T   H   V   N   E   L   V   I   F

          610         620         630         640         650         660
```

Figure 18C

```
                *                   *                   *                   *                   *                   *
GTC ATG GGA GGG CTT GTT ATT GTC ATT CCA TTT GTG CTC ATC ATT GTA TCT TAT GCA CGA
 V   M   G   G   L   V   I   V   I   P   F   V   L   I   I   V   S   Y   A   R

              670                 680                 690                 700                 710                 720
                *                   *                   *                   *                   *                   *
GTT GTC GCC TCC ATT CTT AAA GTC CCT TCT GTC CGA GGC ATC CAC AAG ATC TTC TCC ACC
 V   V   A   S   I   L   K   V   P   S   V   R   G   I   H   K   I   F   S   T

              730                 740                 750                 760                 770                 780
                *                   *                   *                   *                   *                   *
TGC GGC TCC CAT CTG TCT GTG GTG TCA CTG TTC TAT GGG ACA ATC ATT GGT CTC TAC TTA
 C   G   S   H   L   S   V   V   S   L   F   Y   G   T   I   I   G   L   Y   L

              790                 800                 810                 820                 830                 840
                *                   *                   *                   *                   *                   *
TGT CCG TCA GCT AAT AAC TCT ACT GTG AAG GAG ACT GTC ATG GCC ATG ATG TAC ACA GTG
     PRONUC/TRA   OPTION

 C   P   S   A   N   N   S   T   V   K   E   T   V   M   A   M   M   Y   T   V

              850                 860                 870                 880                 890                 900
                *                   *                   *                   *                   *                   *
GTG ACC CCC ATG CTG AAC CCC TTC ATC TAC AGC CTG AGG AAC AGA GAC ATG AAA GAG GCA
 V   T   P   M   L   N   P   F   I   Y   S   L   R   N   R   D   M   K   E   A
```

Figure 18D

```
                    910                 920                 930                 940
                     *                   *                   *                   *
CTG ATA AGA GTC CTT TGT AAA AAG AAA ATT ACC TTC TGT CTA TGA
 L   I   R   V   L   C   K   K   K   I   T   F   C   L   -
```

Translation begun with base no. 8
Translated to base no. 952
Sequence printed from base no. 8 to base no. 952
Sequence numbered beginning with base no. 8

Figure 19A

Translated Sequence of H5.D1S

```
                10                  20
ATC TGT TTT GTG TCT ACC ACT GTC CCA
 I   C   F   V   S   T   T   V   P

                70                  80
                *                   *
GTC ATC ACC TAT GCA GAC TGC ATC ACC
 V   I   T   Y   A   D   C   I   T

                *                   *
GAC AGC TTA CTC CTG ACT GTG ATG GCC
 D   S   L   L   L   T   V   M   A

               190                 200
                *                   *
CAC TAC ACA GTC ATT ATG AGC TCC TGG
 H   Y   T   V   I   M   S   S   W

               250                 260
                *                   *
GTG AGC ATC CTA TAT TCT CTG TTA CAA
 V   S   I   L   Y   S   L   L   Q
```

Figure 19B

```
 30                  40                  50                  60
 *                   *                   *                   *
AAG CAG CTG GTG AAC ATC CAG ACA CAG AGC AGA
 K   Q   L   V   N   I   Q   T   Q   S   R

 90                  100                 110                 120
 *
CAG ATG TGC TTT TTT ATA CTC TTT GTA GTG TTG
 Q   M   C   F   F   I   L   F   V   V   L

                     160                 170                 180
 *                   *                   *                   *
TAT GAC CGG TTT GTG GCC ATC TGT CAC CCC CTG
 Y   D   R   F   V   A   I   C   H   P   L

210                  220                 230                 240
 *                   *                   *                   *
CTC TGT GGA CTG CTG GTT CTG GTG TCC TTG ATC
 L   C   G   L   L   V   L   V   S   W   I

270                  280                 290                 300
 *                   *                   *                   *
AGC ATA ATG GCA TTG CAG CTG TCC TTC TGT ACA
 S   I   M   A   L   Q   L   S   F   C   T
```

Figure 19C

```
          310                 320                 330
           *                   *                   *
GAA CTG AAA ATC CCT CAA TTT TTC TGT GAA
 E   L   K   I   P   Q   F   F   C   E

          370                 380                 390
           *                   *                   *
GAC ACT TTT ATT AAT GAC ATG ATG ATG AAT
 D   T   F   I   N   D   M   M   M   N

          430                 440                 450
           *                                       *
CTC GCT GGA ATA TTT TAC T-- TAC TTT AAG
 L   A   G   I   F   Y   X   Y   F   K

          490                 500                 510
           *                   *                   *
GCT CAG GGG ATG AAT AAA GCA CTT TCC ACC
 A   Q   G   M   N   K   A   L   S   T

          550                 560                 570
                               *                   *
TTT TAT TGT ACA GGC GTA GGT GTG TAC CTT
 F   Y   C   T   G   V   G   V   Y   L

          610                 620                 630
           *                   *                   *
AAT GCT GCA GCC TCG GTG ATG TAC ACT GTG
 N   A   A   A   S   V   M   Y   T   V
```

Figure 19D

```
                340                 350                 360
                 *                   *                   *
CTT AAT CAG GTC ATC CAC CTT GCC TGT TCC
 L   N   Q   V   I   H   L   A   C   S

                400                 410                 420
                 *                   *                   *
TTT ACA AGT GTG CTG CTG GGT GGG GGA TGC
 F   T   S   V   L   L   G   G   G   C

                460                 470                 480
                 *                   *                   *
ATA CTT TGT TGC ATA TGT TCG ATC TCA TCA
 I   L   C   C   I   C   S   I   S   S

                520                 530                 540
                 *                   *                   *
TGT GCA TCT CAC CTC TCA GTT GTC TCC TTA
 C   A   S   H   L   S   V   V   S   L

                580                 590                 600
                 *                   *                   *
AGT TCT GCT GCA ACC CAT AAC TCA CTC TCA
 S   S   A   A   T   H   N   S   L   S

                640
                 *
GTC ACC TCC ATG CTG
 V   T   S   M   L
```

Figure 20A

J1

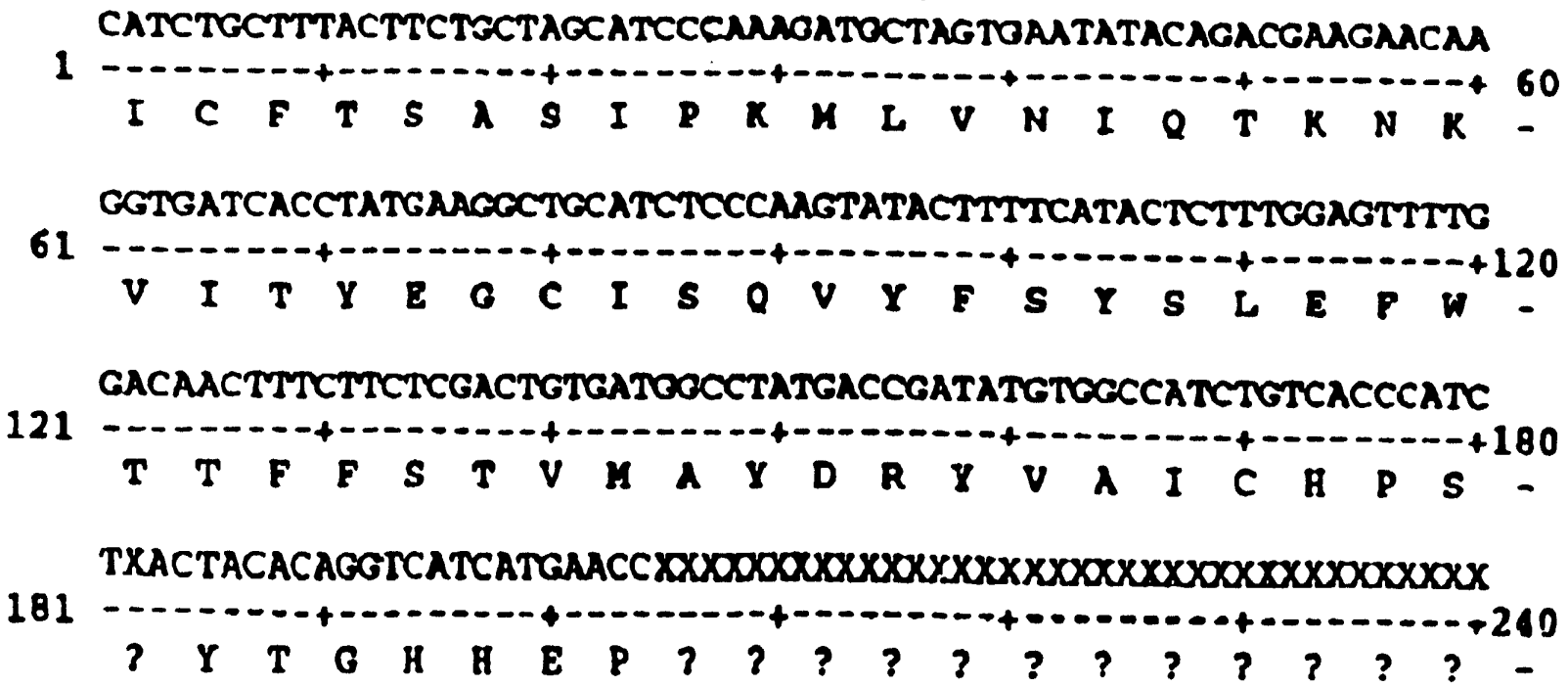


Figure 20B

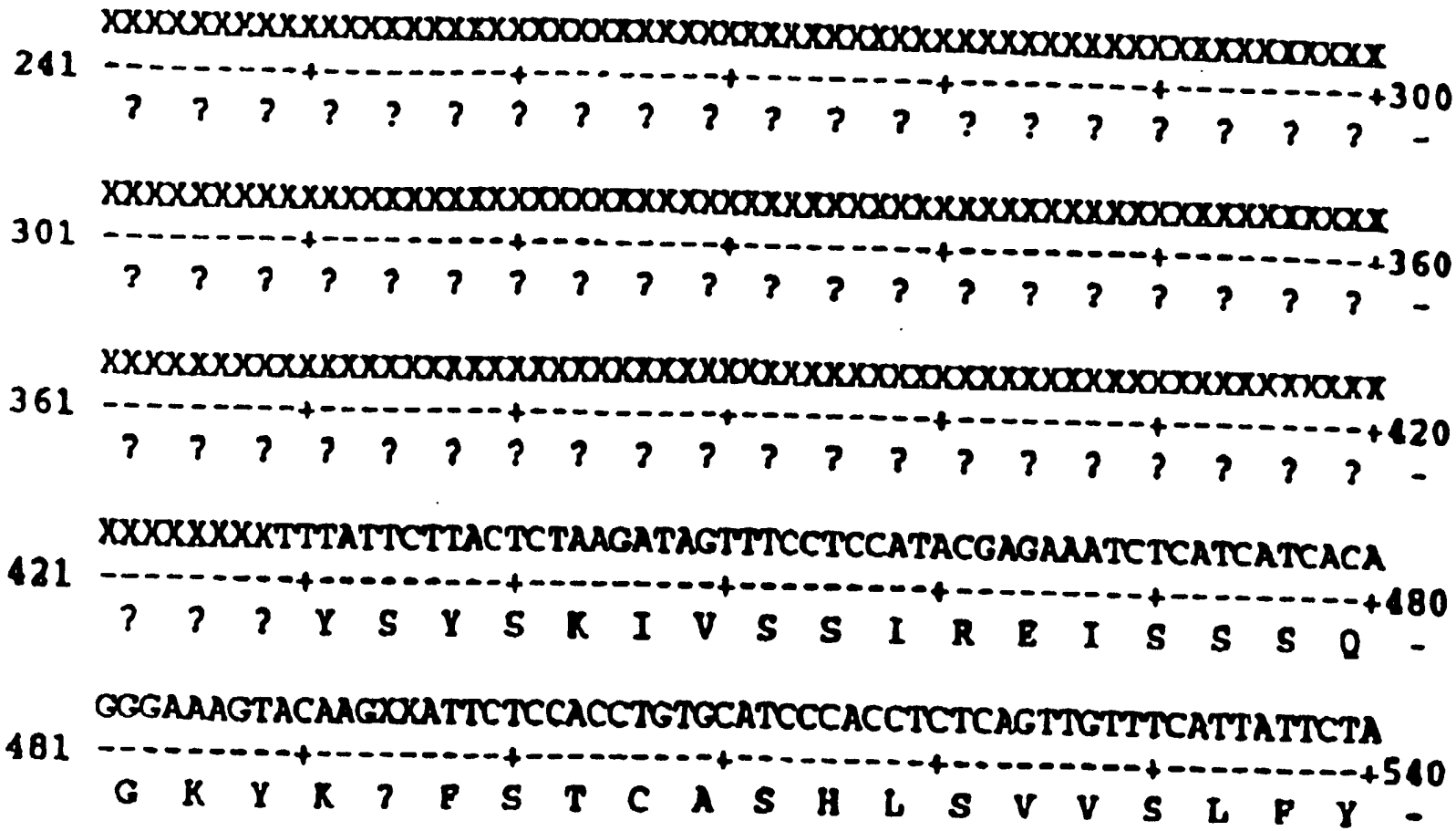


Figure 20C

J2

Figure 21A

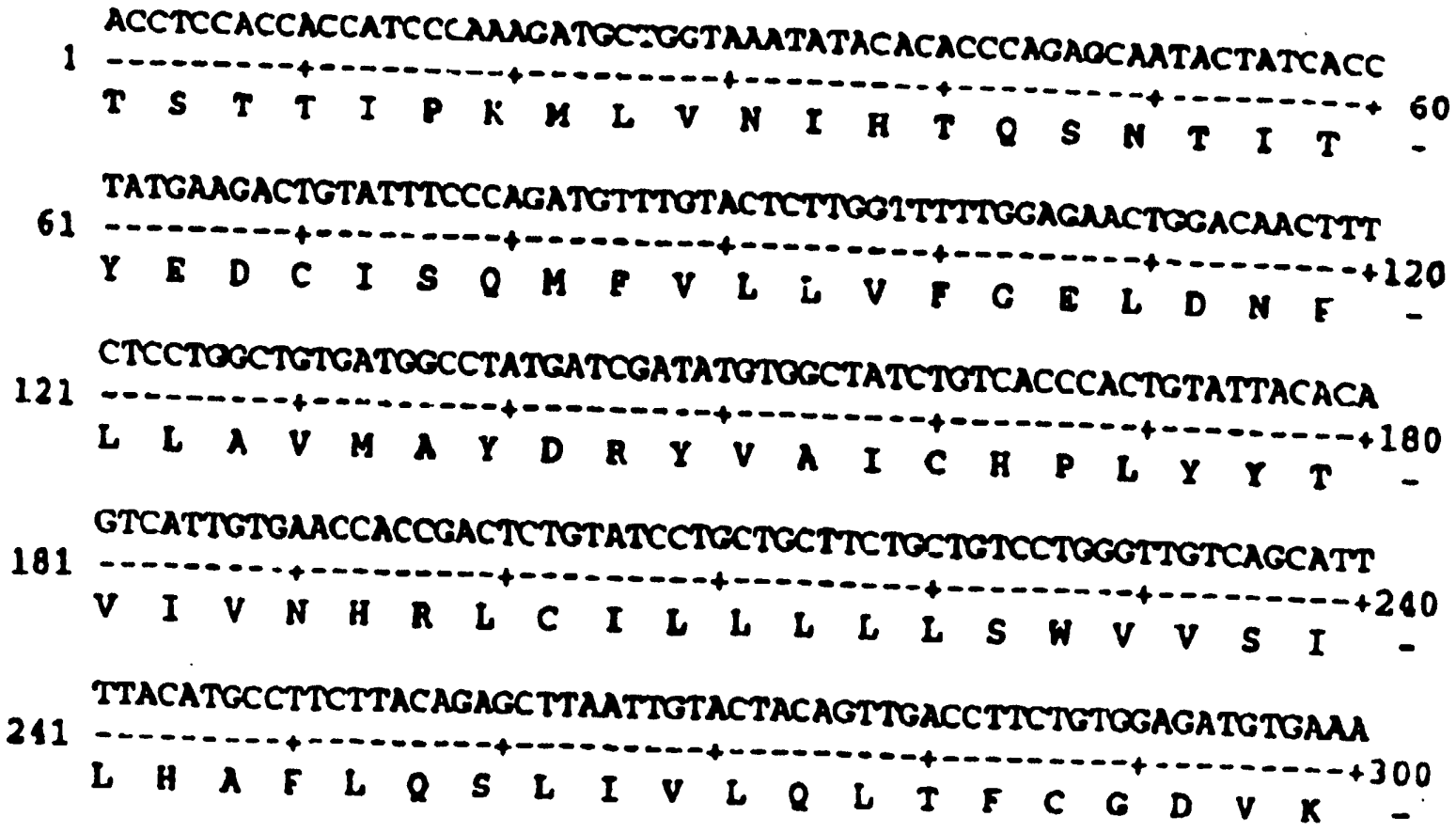


Figure 21B


ATCCCTCACTTCTTCTGTGAGCTCAATCAGCTGTCCCAACTCACATGTTCAGACAACTTT
301 ---------+---------+---------+---------+---------+---------+360
I P H F F C E L N Q L S Q L T C S D N F -
CCAAGTCACCTCACAATGCATCTTGTACCTGTTATATTTGCAGCTATTTCCCTCAGTGGT
361 ---------+---------+---------+---------+---------+---------+420
P S H L T M H L V P V I F A A I S L S G -
ATCCTTTACTCTTATTTCAAGATAGTGTCTTCCATACGTTCTATGTCCTCAGTTCAAGGG
421 ---------+---------+---------+---------+---------+---------+480
I L Y S Y F K I V S S I R S M S S V Q G -
AAGTACAAGGCATTTTCTACATGTGCCTCTCACCTTTCCATTGTCTCCTTATTTTATAGT
481 ---------+---------+---------+---------+---------+---------+540
K Y K A F S T C A S H L S I V S L F Y S -
ACAGGCCTCGGGGTGTACGTCAGTTCTGCTGTGATCCGAAGCTCACACTCCTCTGCAAGT
541 ---------+---------+---------+---------+---------+---------+600
T G L G V Y V S S A V I R S S H S S A S -
GCTTCGGTCATGTATACTGTGGTCACCCCCATGTTG
601 ---------+---------+---------+------ 636
A S V M Y T V V T P M L -

Figure 22A

J4

Figure 22B


ACCAAATAGAATCAATCACTTTTACTGTGATTTTGCTCCGTTAGTAGAACTTTCTTGCTC
301 ---------+---------+---------+---------+---------+---------+360
P N R I N H F Y C D F A P L V E L S C S -
TGATGTCAGTGTTCCTGATGCTGTTACCTCATTTTCTGCTGCCTCAGTTACTATGCTCAC
361 ---------+---------+---------+---------+---------+---------+420
D V S V P D A V T S F S A A S V T M L T -
AGTGTTTATCATAGCCATCTCCTATACCTATATCCTCATCACCATCCTGAAGATGCGTTC
421 ---------+---------+---------+---------+---------+---------+480
V F I I A I S Y T Y I L I T I L K M R S -
CACTGAGGGTCGACAGAAAGCATTCTCTACCTGCACTTCCCACCTCACTGCAGTCACTCT
481 ---------+---------+---------+---------+---------+---------+540
T E G R Q K A F S T C T S H L T A V T L -
GTGCTATGGAACCATCACATTCATCTATGTGATGCCCAAGTCCAGCTACTCCACAGACCA
541 ---------+---------+---------+---------+---------+---------+600
C Y G T I T F I Y V M P K S S Y S T D Q -
GAACAAGGTGGTGTCTGTGTTTTATATGGTGGTGATCCCCATGTTG
601 ---------+---------+---------+---------+------ 646
N K V V S V F Y M V V I P M L -

Figure 23A

J7

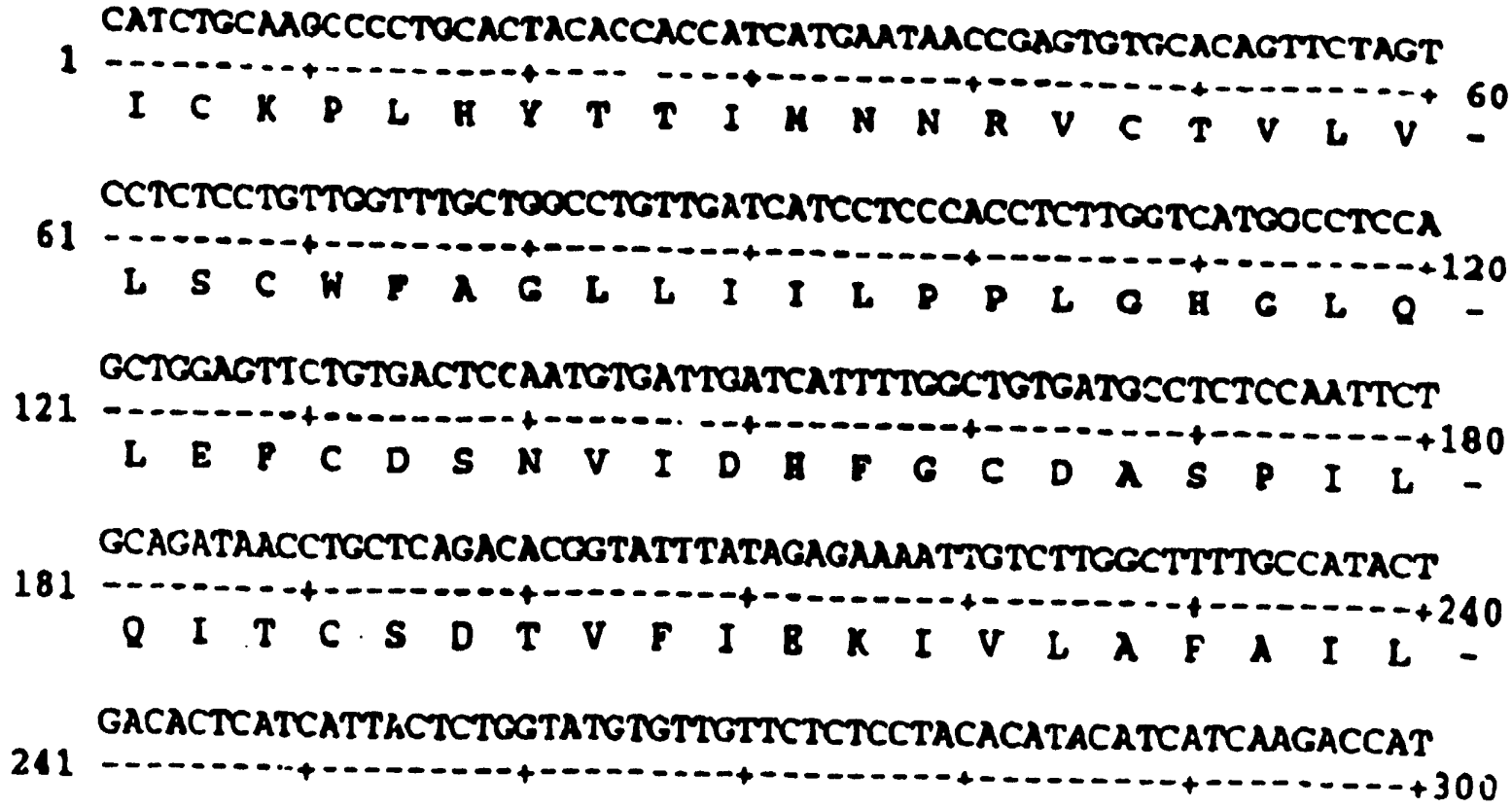


Figure 23B

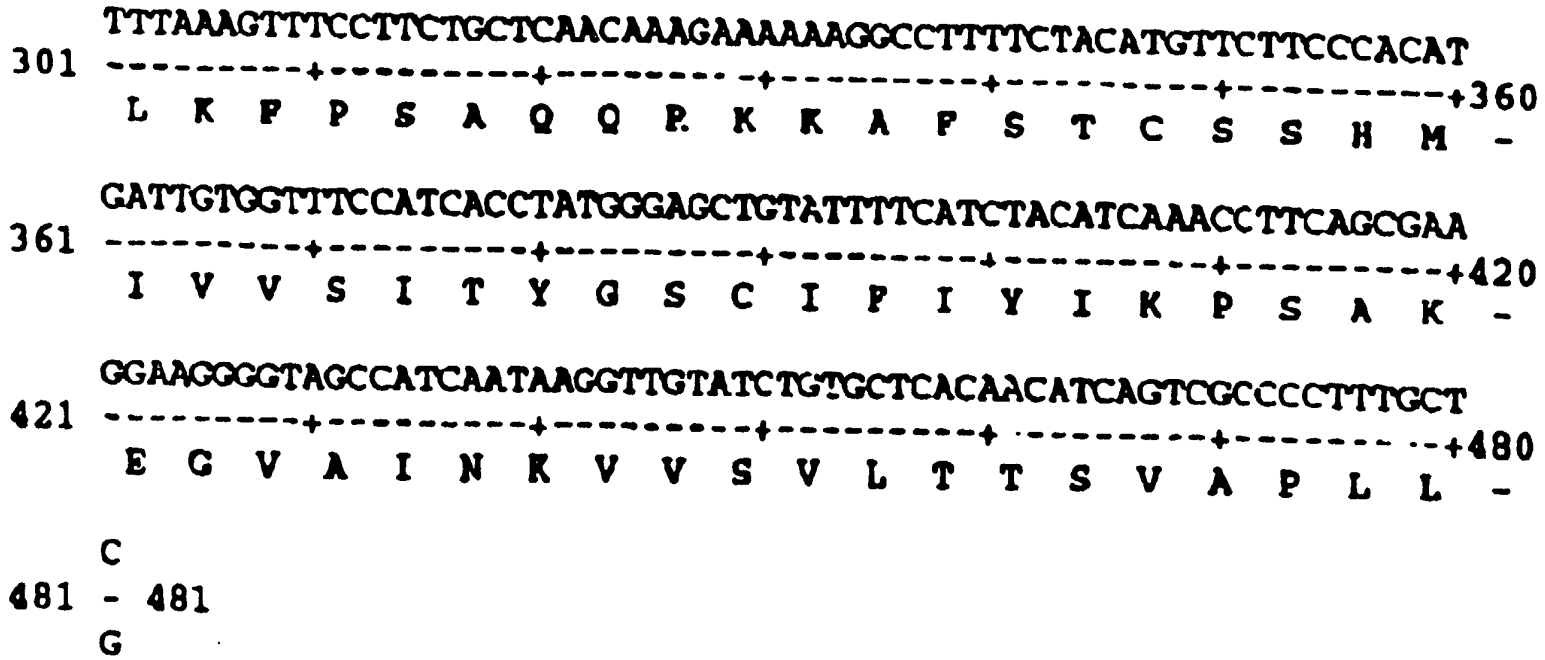


Figure 24A

J8

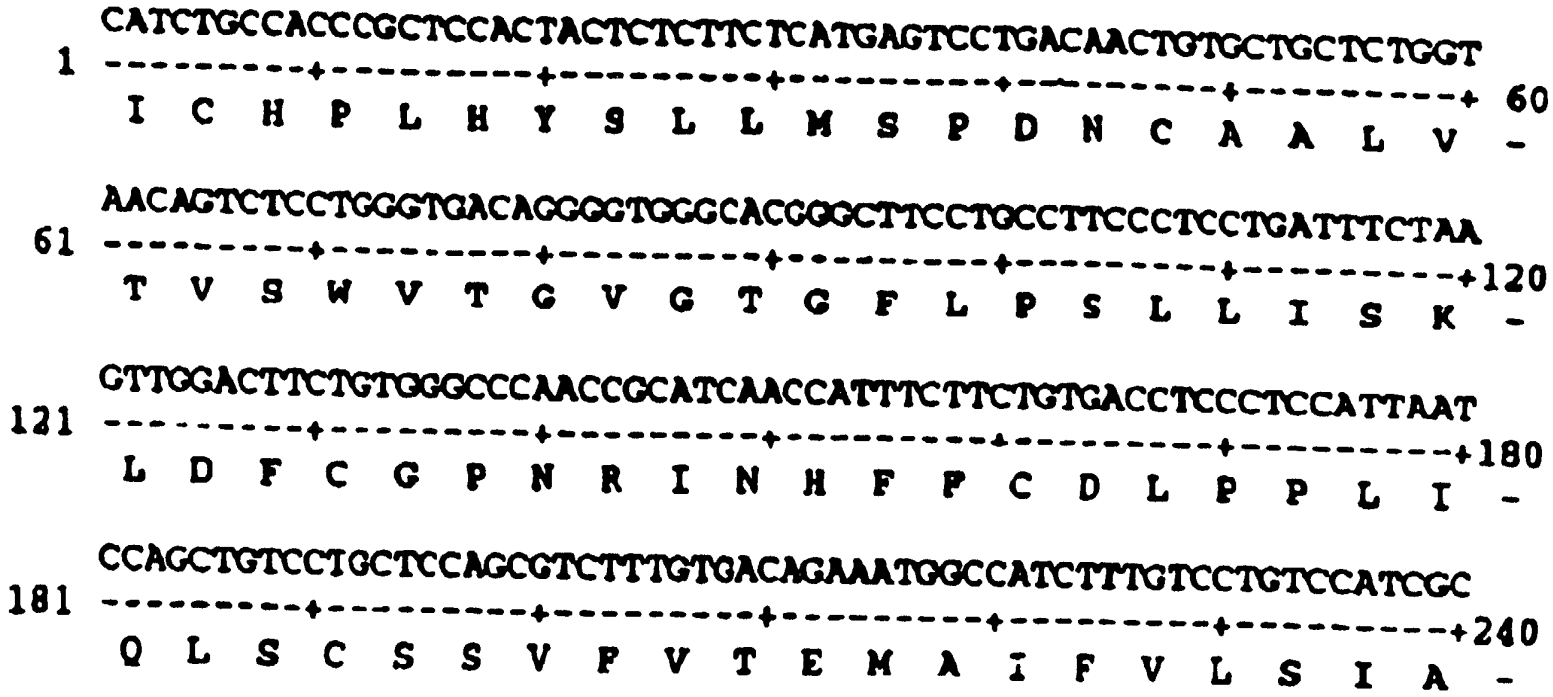


Figure 24B


TGTGCTCTGCATCTGTTTCCTCCTAACCCXXXXXTCCTACATTTTCATAGTGTCCTCCAT
241
V L C I C F L L T ? ? S Y I F I V S S I -
+300
TCTGAGAATCCCTTCCACTACCGGCAGGATGAAGACATTTTCTACATGTGGCTCCCACCT
301
L R I P S T T G R M K T F S T C G S H L -
+360
GGCCGTGGTCACCATCTACTATGGGACCATGATCTCCATGTATGTCGGCCCAAATGCGCA
361
A V V T I Y Y G T M I S M Y V G P N A H -
+420
TCTGTCCCCGGAGCTCAACAAGGTCATTTCTGTCTTCTACACTGTGATCACCCCACTACT
421
L S P E L N K V I S V F Y T V I T P L L -
+480
G
481 - 481

Figure 25A

J11

Figure 25B

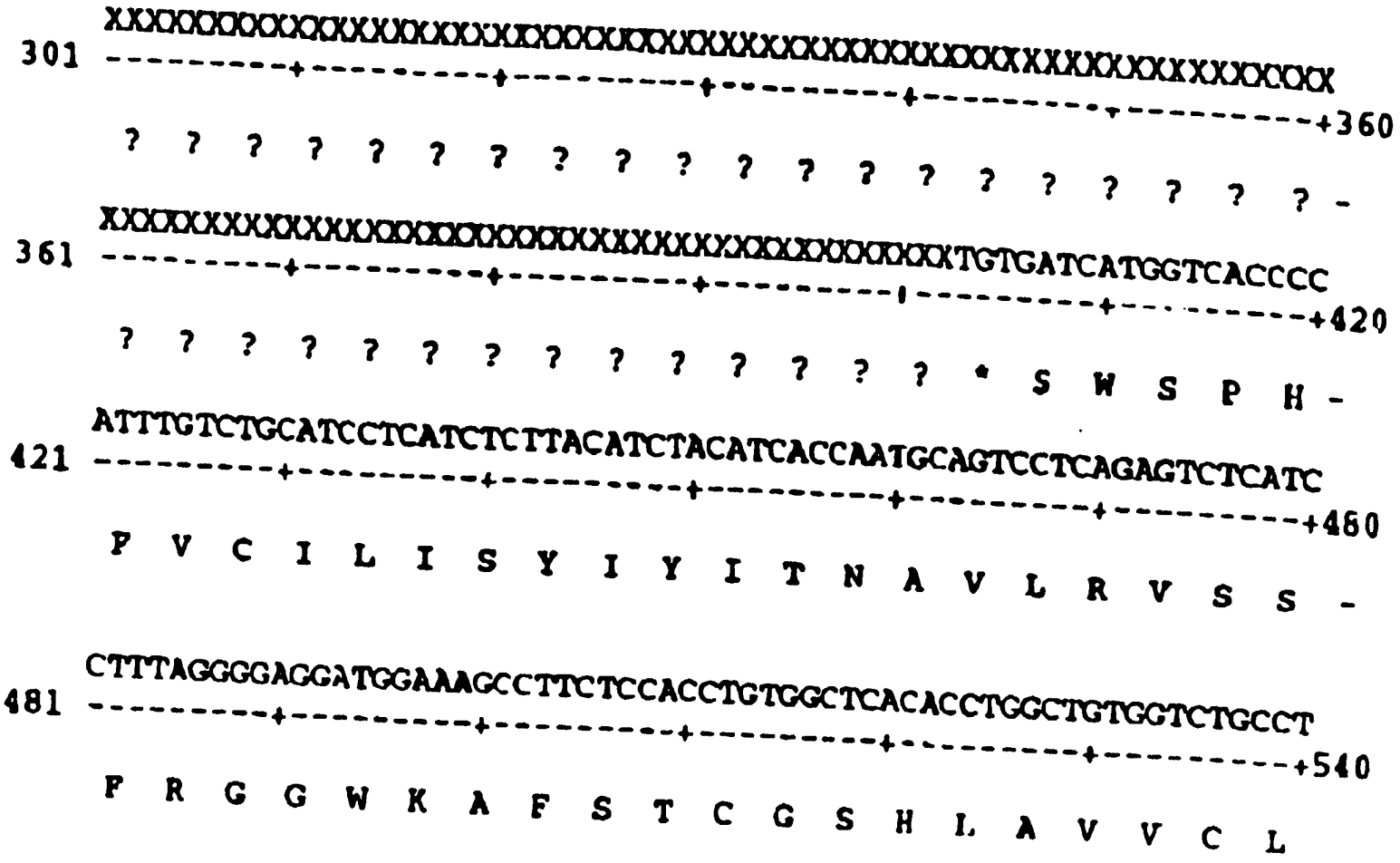
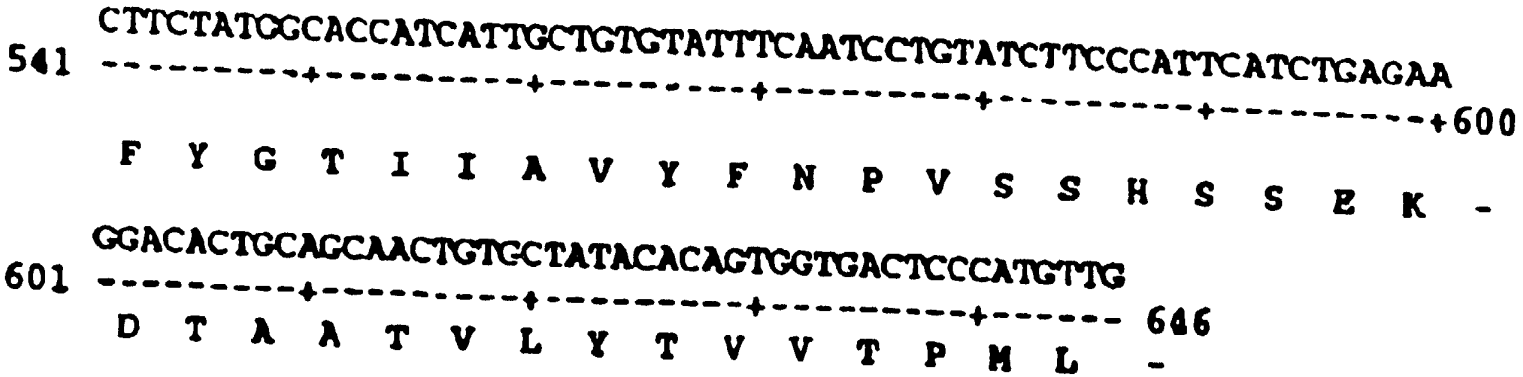

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
301 ---------+---------+---------+---------+---------+---------+360
? -
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
361 ---------+---------+---------+---------+---------+---------+420
? ? ? ? ? ? ? ? ? ? ? ? ? ? * S W S P H -
ATTTGTCTGCATCCTCATCTCTTACATCTACATCACCAATGCAGTCCTCAGAGTCTCATC
421 ---------+---------+---------+---------+---------+---------+460
P V C I L I S Y I Y I T N A V L R V S S -
CTTTAGGGGAGGATGGAAAGCCTTCTCCACCTGTGGCTCACACCTGGCTGTGGTCTGCCT
481 ---------+---------+---------+---------+---------+---------+540
F R G G W K A F S T C G S H L A V V C L

Figure 25C



J14

Figure 26A

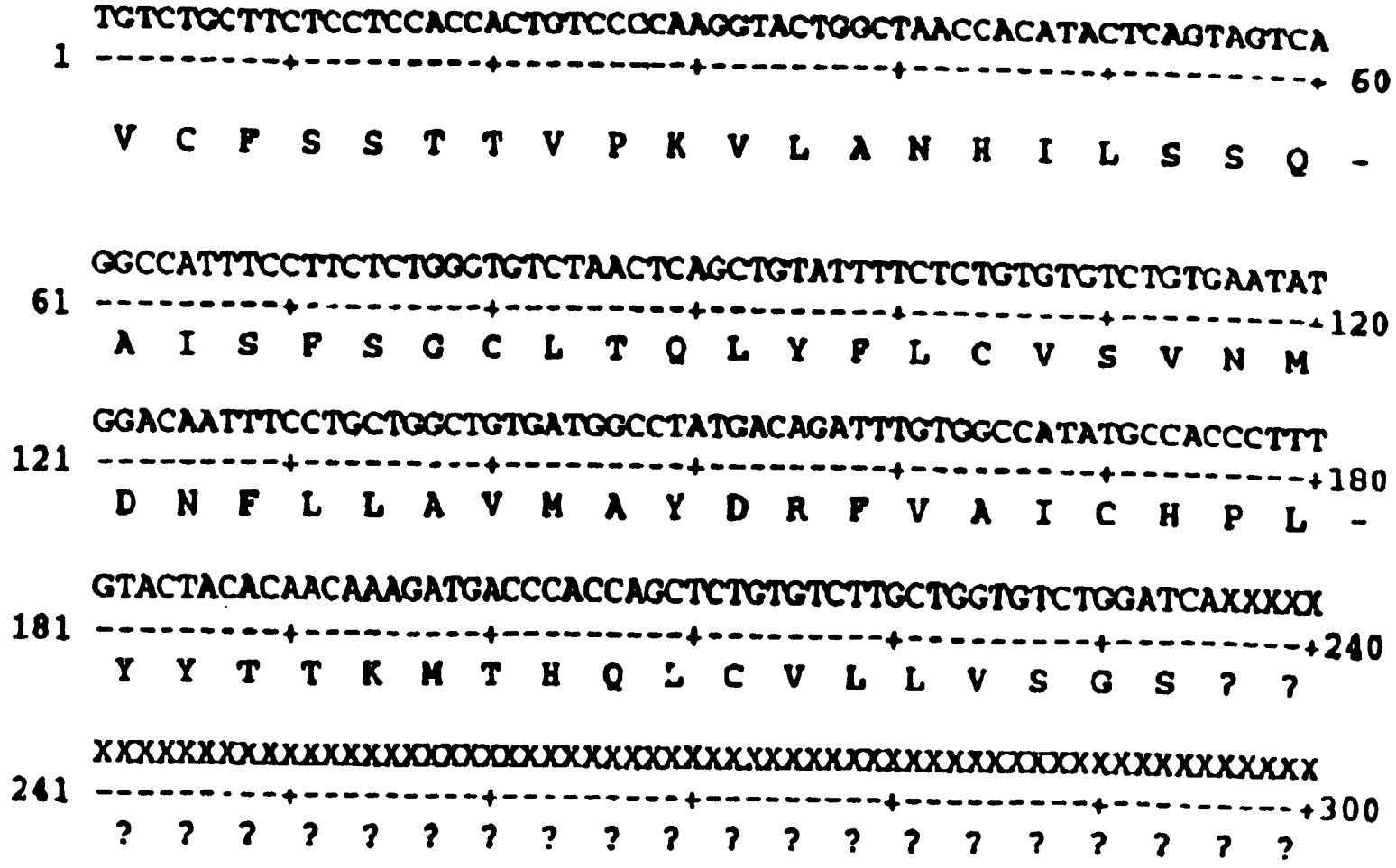


Figure 26B

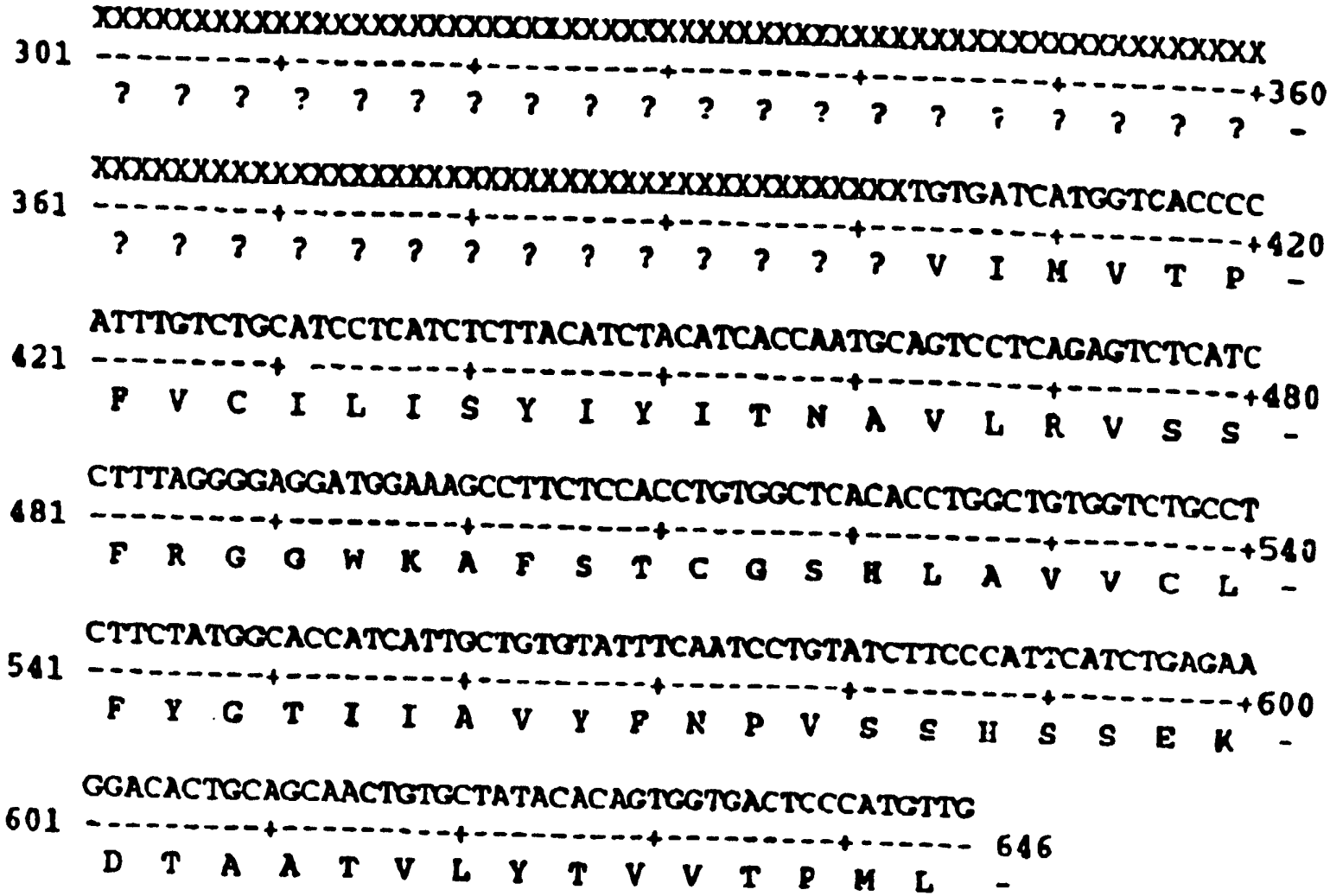


Figure 27A

J15

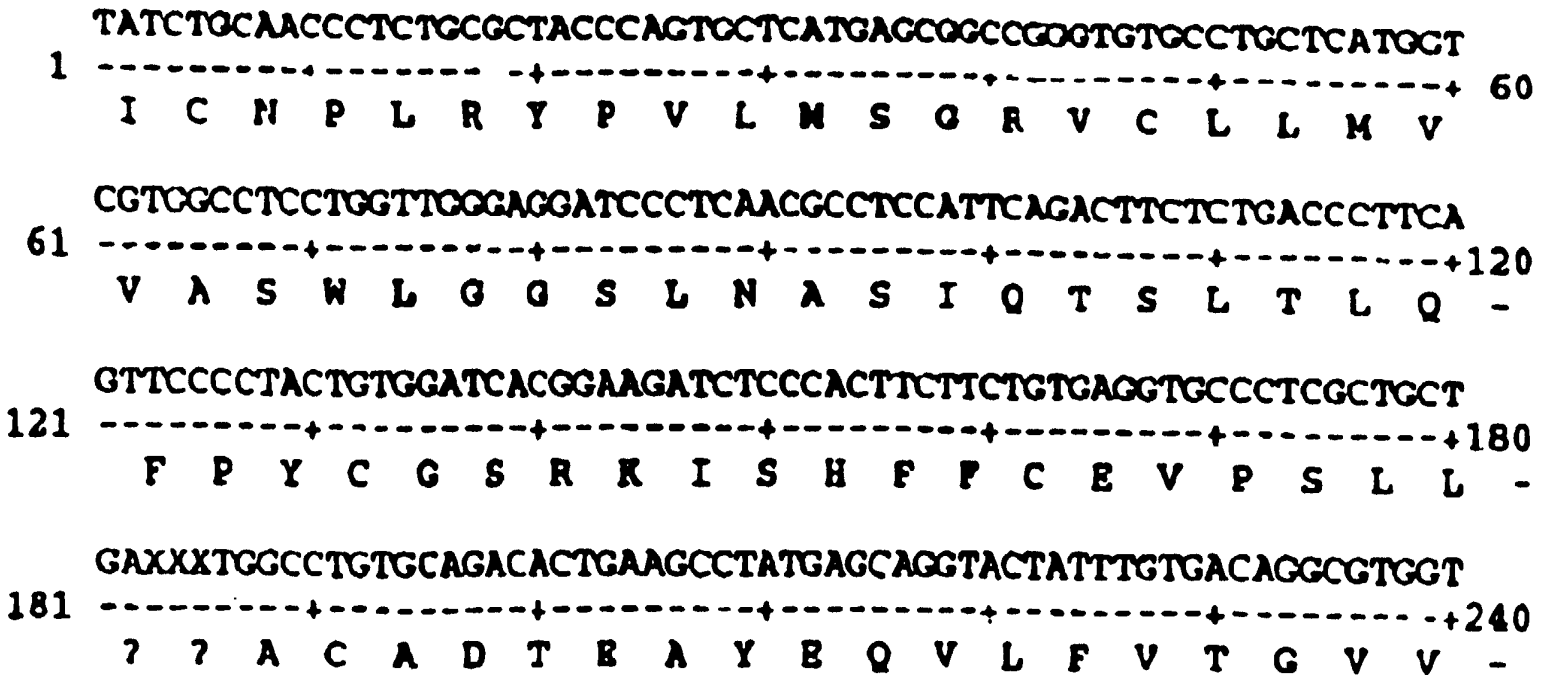


Figure 27B

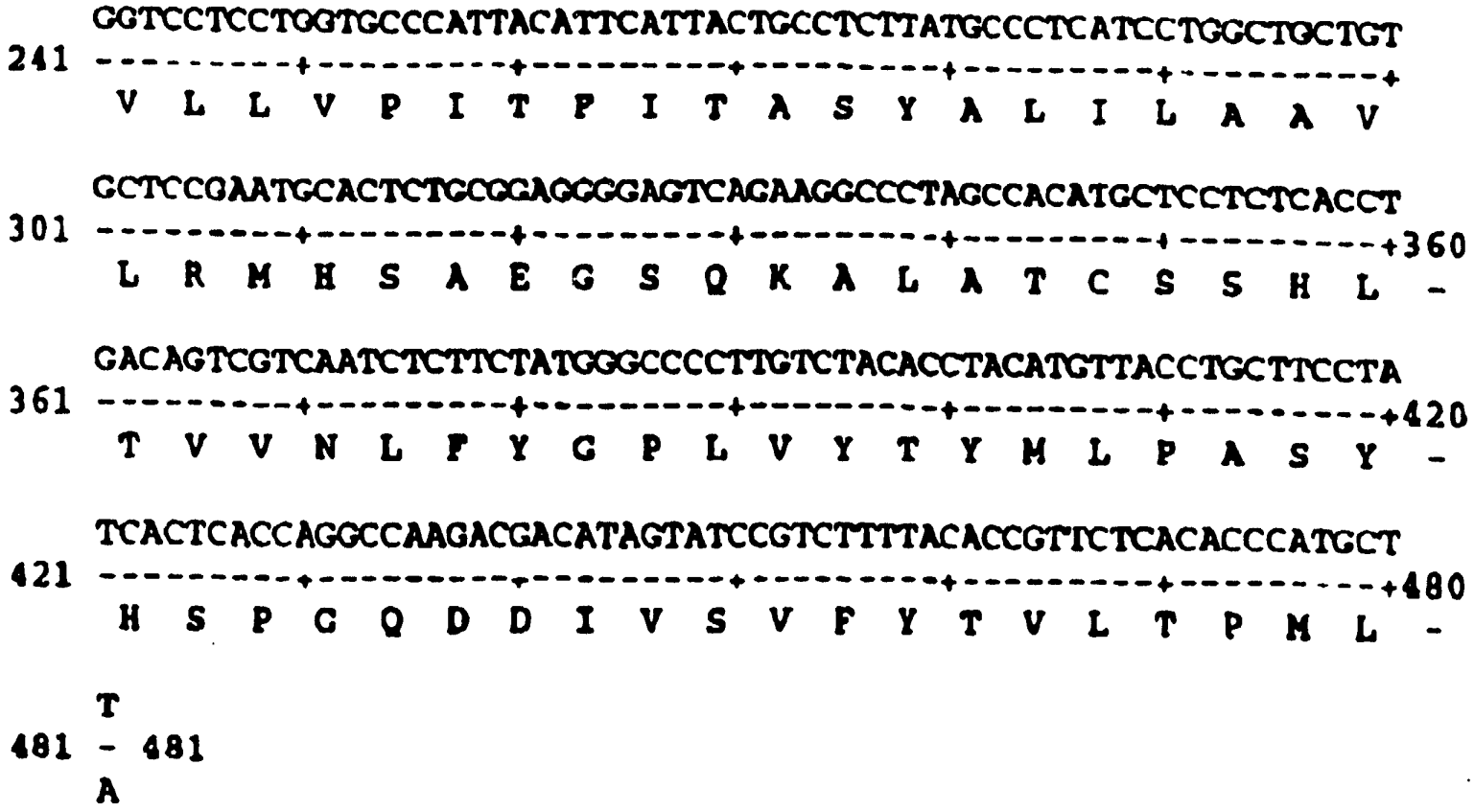

GGTCCTCCTGGTGCCCATTACATTCATTACTGCCTCTTATGCCCTCATCCTGGCTGCTGT
241
V L L V P I T F I T A S Y A L I L A A V
GCTCCGAATGCACTCTGCGGAGGGGAGTCAGAAGGCCCTAGCCACATGCTCCTCTCACCT
301
+360
L R M H S A E G S Q K A L A T C S S H L -
GACAGTCGTCAATCTCTTCTATGGGCCCCTTGTCTACACCTACATGTTACCTGCTTCCTA
361
+420
T V V N L F Y G P L V Y T Y M L P A S Y -
TCACTCACCAGGCCAAGACGACATAGTATCCGTCTTTTACACCGTTCTCACACCCATGCT
421
+480
H S P G Q D D I V S V F Y T V L T P M L -
T
481 - 481
A

Figure 28A

J16

Figure 28B

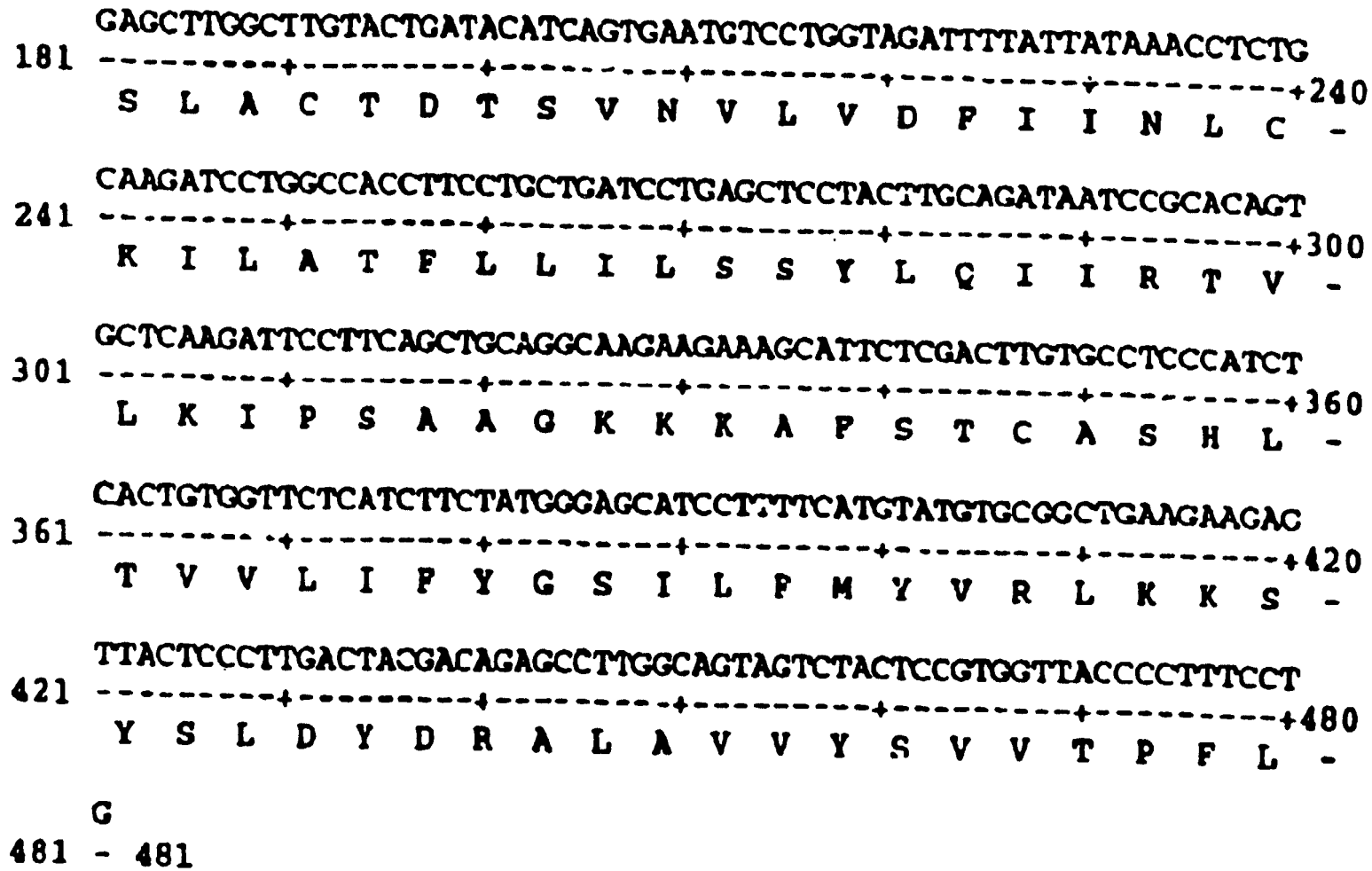
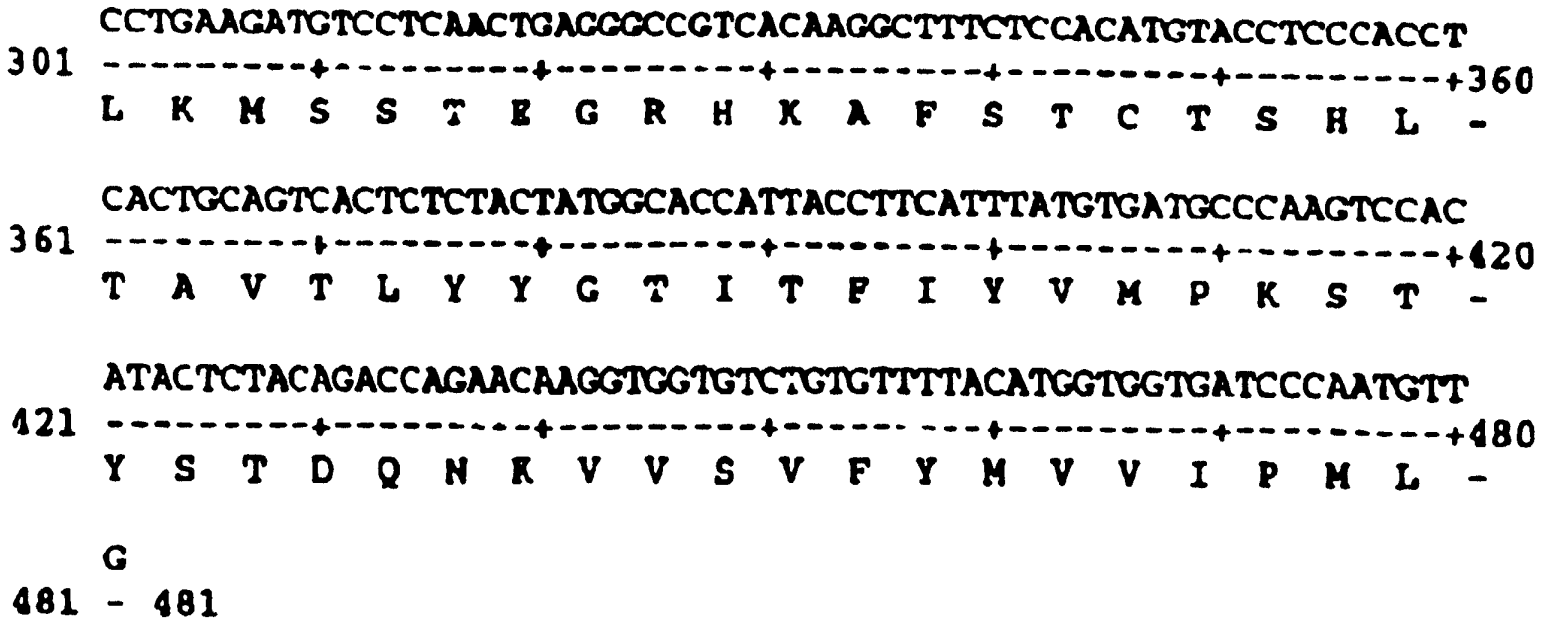


Figure 29A

J17

Figure 29B


CCTGAAGATGTCCTCAACTGAGGGCCGTCACAAGGCTTTCTCCACATGTACCTCCCACCT
301 ----------+----------+----------+----------+----------+----------+360
L K M S S T E G R H K A F S T C T S H L -
CACTGCAGTCACTCTCTACTATGGCACCATTACCTTCATTTATGTGATGCCCAAGTCCAC
361 ----------+----------+----------+----------+----------+----------+420
T A V T L Y Y G T I T F I Y V M P K S T -
ATACTCTACAGACCAGAACAAGGTGGTGTCTGTGTTTTACATGGTGGTGATCCCAATGTT
421 ----------+----------+----------+----------+----------+----------+480
Y S T D Q N K V V S V F Y M V V I P M L -
G
481 - 481

J19

Figure 30A

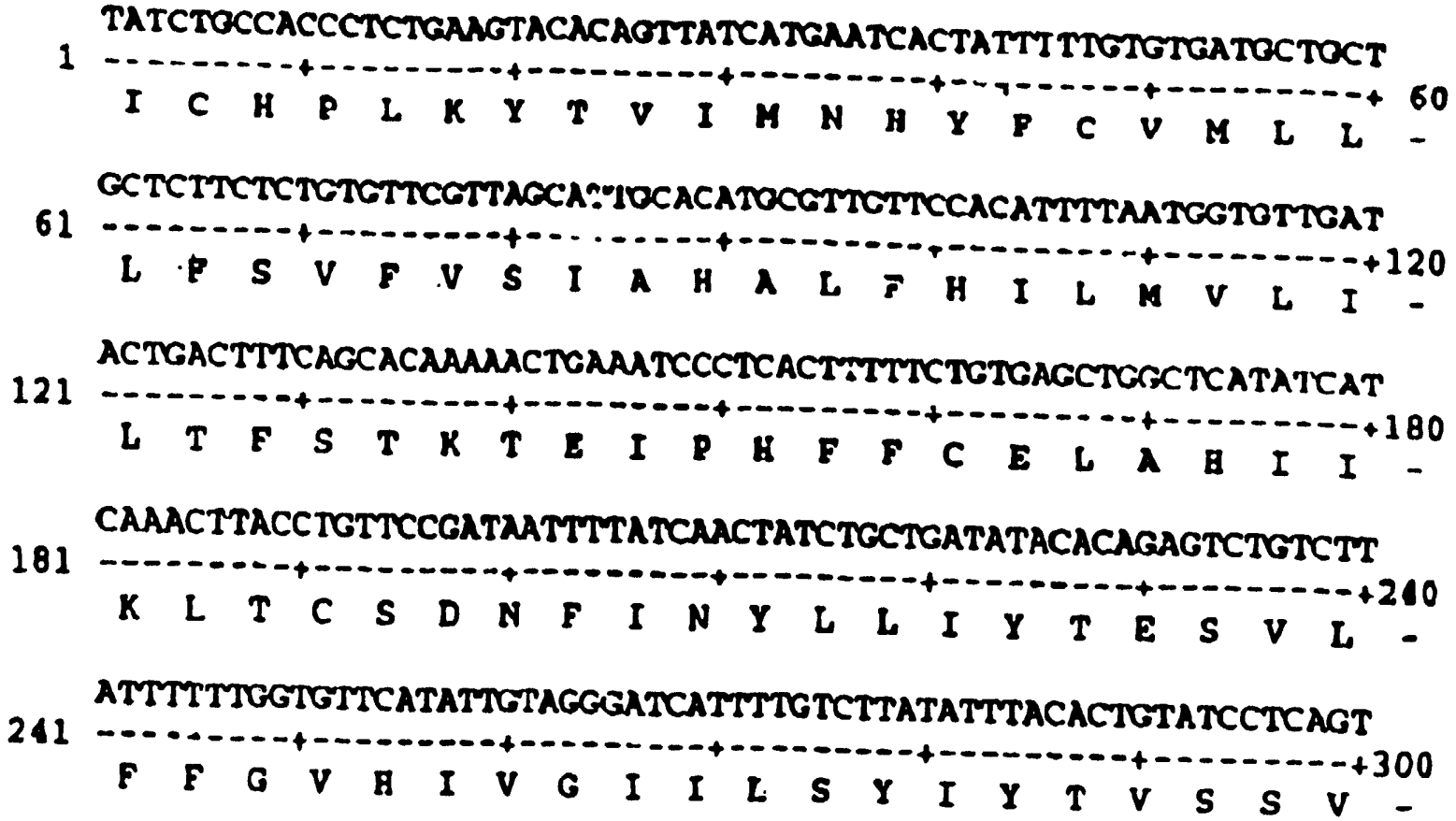


Figure 30B

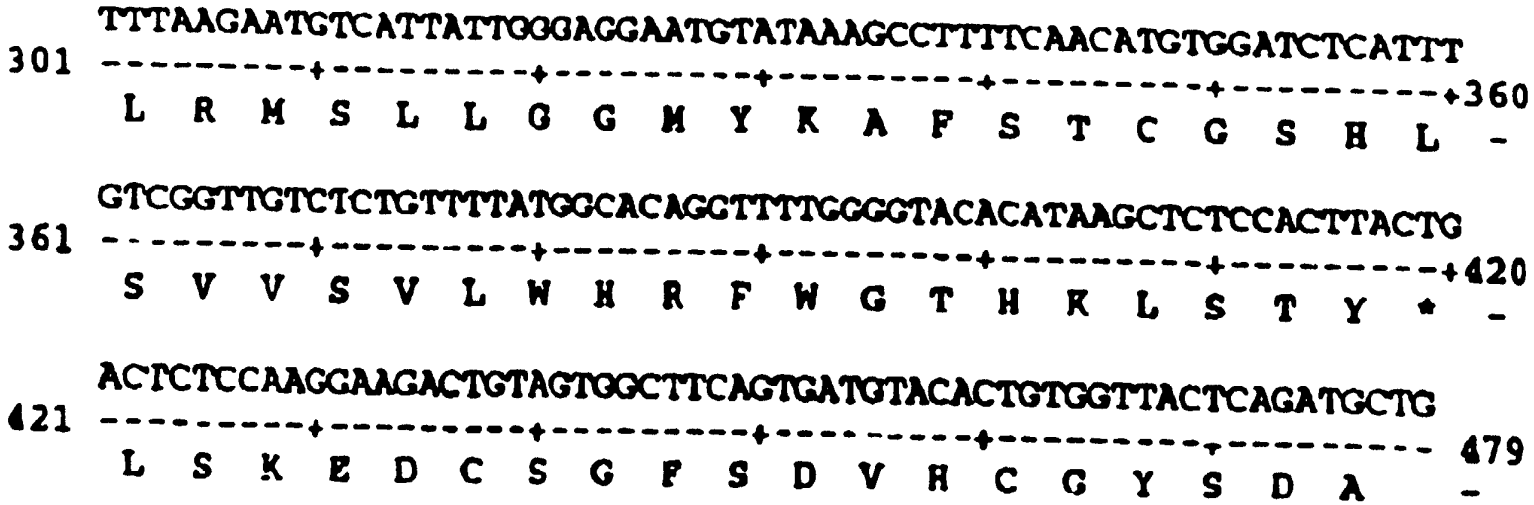


Figure 31A

J20

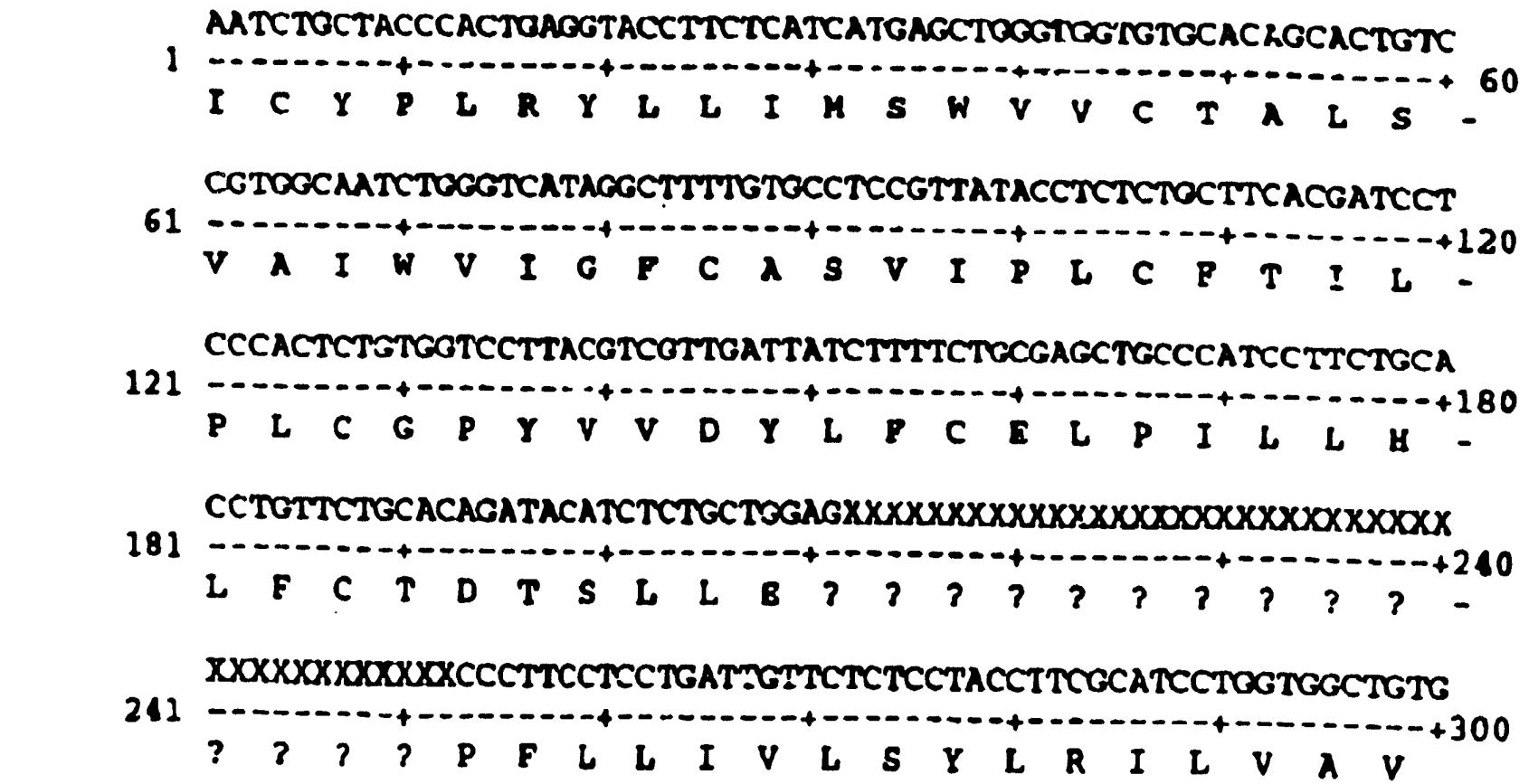


Figure 31B

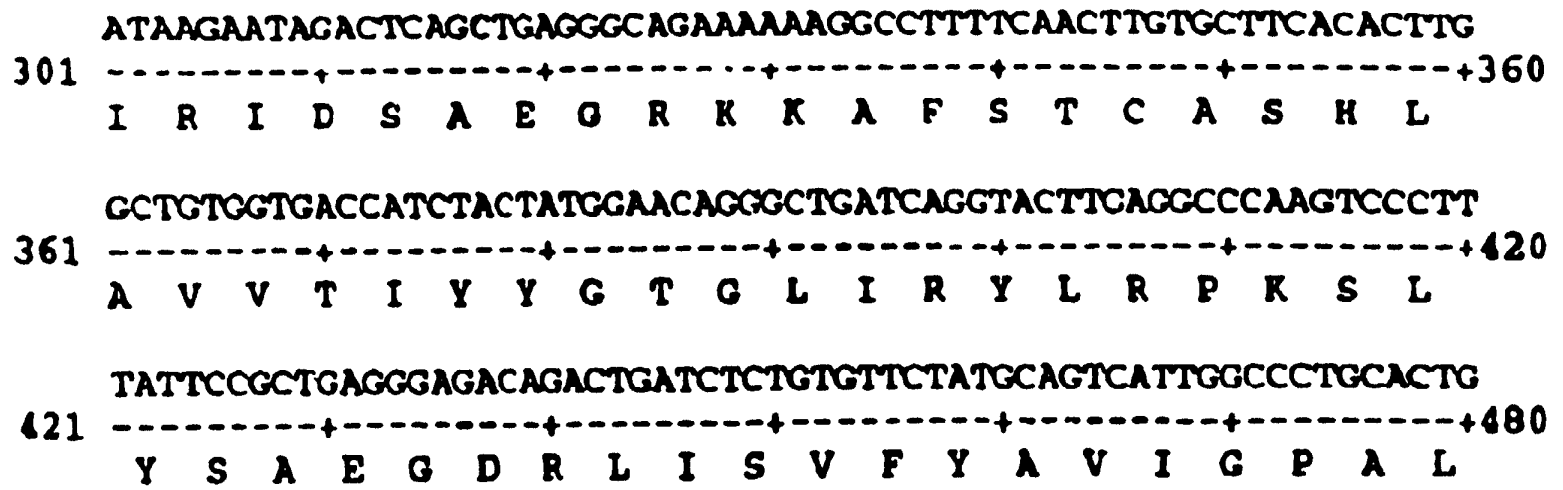

ATAAGAATAGACTCAGCTGAGGGCAGAAAAAAGGCCTTTTCAACTTGTGCTTCACACTTG
301 ---------+---------+---------+---------+---------+---------+360
I R I D S A E G R K K A F S T C A S H L
GCTGTGGTGACCATCTACTATGGAACAGGGCTGATCAGGTACTTCAGGCCCAAGTCCCTT
361 ---------+---------+---------+---------+---------+---------+420
A V V T I Y Y G T G L I R Y L R P K S L
TATTCCGCTGAGGGAGACAGACTGATCTCTGTGTTCTATGCAGTCATTGGCCCTGCACTG
421 ---------+---------+---------+---------+---------+---------+480
Y S A E G D R L I S V F Y A V I G P A L

Figure 32